PATENT APPLICATION
Attorney Docket No. A7256

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

RECEIVED
NOV 12 1999
GROUP 2700

In re application of

Chandrakant Bhailalbhai PATEL et al.

Application No.: **09/140,752**
Continuation of 08/266,753

Group Art Unit: 2711

OIPE JC73
NOV 10 1999
PATENT & TRADEMARK OFFICE

Filed: August 25, 1998

Examiner: not known

For: RADIO RECEIVER FOR RECEIVING BOTH VSB AND QAM DIGITAL HDTV SIGNALS

11/15/99
#

REQUEST FOR INTERFERENCE UNDER 37 C.F.R. § 1.607

Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

Claims 2-100 are pending in the application. Applicant respectfully requests declaration of an interference in accordance with 37 C.F.R. § 1.607(a). The reasons for granting this request follow.

A. Identification of Patents

In accordance with 37 C.F.R. § 1.607(a)(1), Applicant identifies U.S. Patent No. 5,666,170 (hereinafter the `170 Patent), U.S. Patent No. 5,671,253 (hereinafter the `253 Patent), and U.S. Patent No. 5,717,471 (hereinafter the `471 Patent).

B. Proposed Count 1 for Interference

In accordance with 37 C.F.R. § 1.607(a)(2), Applicant proposes the following Count 1 directed to adaptive decoding and adaptive deinterleaving, drafted in the "or" format:

COUNT 1

In a system for receiving and adaptively processing a video signal encoded in one of a plurality of different formats suitable for satellite, terrestrial or cable transmission modes, apparatus comprising:

an adaptive decoder for providing a decoded output from an input signal encoded in different signal formats for different transmission modes;

an adaptive deinterleaver for deinterleaving said decoded output in accordance with a deinterleaving function selected from a plurality of deinterleaving functions, wherein

said adaptive deinterleaver is configured with said selected deinterleaving function; and

an output signal processor for processing deinterleaved output data.

OR

A method for adaptively processing a video signal encoded in one of a plurality of different formats suitable for satellite, terrestrial or cable transmission modes, comprising the steps of:

adaptively decoding an input signal to provide a decoded output, said input signal being encoded in different signal formats for different transmission modes;

selecting a deinterleaving function from a plurality of deinterleaving functions;

configuring an adaptive deinterleaver with said selected deinterleaving function;

adaptively deinterleaving said decoded output using said selected deinterleaving function; and

processing said deinterleaved data.

B.1. Correspondence of Patent Claims to Proposed Count 1

In accordance with 37 C.F.R. § 1.607(a)(3), Applicant identifies that claims 1-9, 11, 13, and 19 of the `170 Patent correspond to proposed Count 1. An explanation of this correspondence follows.

Independent claims 1, 5, and 19 of the `170 Patent correspond to proposed Count 1. One difference between each of claims 1 and 5 and proposed Count 1 (first part) is that claims 1 and 5 each recite that the decoder provides a decoded output "as a function of a code rate selected from a plurality of code rates," whereas Count 1 is silent regarding code rates. The only difference between claim 19 and proposed Count 1 (second part) is that claim 19 recites that decoding is done "as a function of a code rate selected from a plurality of code rates," whereas Count 1 is silent regarding code rates. Selection of different code rates is not a difference of patentable distinction. In the art of digital communications, changing code rates to adapt to varying channel conditions is an old and well known technique. For example, United States Patent No. 5,438,590 to Tzukerman et al discloses a satellite television broadcast system which adaptively decodes a received signal having a code rate selected from a plurality of code rates.

Another difference between claim 5 and proposed Count 1 (first part) is that claim 5 recites that "said adaptive decoder is bypassed when said encoded video signal exhibits a predetermined format" while this limitation is not recited in Count 1. Bypassing of one of the many decoders in a digital receiver is a predictable feature in the context of a multiple format system. Typically, digital communications utilizes a number of coding schemes layered over one another. In the multiple format context, one or more of the formats may not require a

particular coding scheme which is used in other formats. In other words, the simplest way an "adaptive decoder" might adapt is to take itself out of the signal stream completely if it is not needed for a given format. In any case, this difference would have been plainly obvious to a skilled artisan in this art and, thus, is not an independently patentable feature.

The correspondence of independent claims 1, 5, and 19 of the `170 Patent to proposed Count 1 is set out in tabular form in Attachment A.

Dependent claims 2-4, 6-9, 11, and 13 of the `170 Patent also correspond to proposed Count 1. These dependent claims describe in greater detail various aspects of the same invention to which proposed Count 1 is directed.

B.2. Correspondence of Application Claims to Proposed Count 1

In accordance with 37 C.F.R. § 1.607(a)(4), Applicant identifies that claims 2-18, 22-31, 41, and 42 of the present application correspond to proposed Count 1. An explanation of this correspondence follows.

Independent claim 2 of the present application corresponds exactly to the first part of proposed Count 1, and independent claim 41 of the present application corresponds exactly to the second part of proposed Count 1. Independent claims 3 and 42 of this application also correspond to proposed Count 1, although they are not exact duplicates thereof.

The only salient difference between claims 3 and 42 and proposed Count 1 is that while the Count recites signals "encoded in different signal formats for different transmission modes," claims 3 and 42 each recite signals "encoded at different times in accordance with different ones

of said plurality of different signal formats." There is little meaningful difference between these two descriptions of the invention. The latter phrasing merely emphasizes a feature that is common both to Applicant's disclosure and the disclosure of the '170 Patent, i.e., that only one signal format is encoded at a given time in a given channel. This is an old, ordinary feature in both analog and digital communications and is not independently patentable.

The correspondence of independent claims 3 and 42 of the present application with proposed Count 1 is set out in tabular form in Attachment B.

Dependent claims 4-18 and 22-31 of this application also correspond to proposed Count 1. These dependent claims describe in greater detail various aspects of the same invention to which proposed Count 1 is directed.

C. Proposed Count 2 for Interference

In accordance with 37 C.F.R. § 1.607(a)(2), Applicant proposes the following Count 2 directed to adaptive decoding and adaptive error correcting, drafted in the "or" format:

COUNT 2

In a system for receiving and adaptively processing a video signal encoded in one of a plurality of different formats suitable for satellite, terrestrial or cable transmission modes, apparatus comprising:

an adaptive decoder for providing a decoded output from an input signal encoded in different signal formats for different transmission modes;

an adaptive error decoder for detecting and correcting errors in said decoded output, said error decoder adapting between different signal formats by

changing at least one of: (a) error function type, (b) error correction code length, and (c) data packet length; and

an output signal processor for processing said error corrected data.

OR

A method of adaptively processing a video signal encoded in one of a plurality of different formats suitable for satellite, terrestrial or cable transmission, comprising the steps of:

adaptively decoding an input signal encoded in different signal formats for different transmission modes to provide a decoded output;

adaptively detecting errors in said decoded output;

adaptively correcting said detected errors in said decoded output by changing at least one of: (a) error function type, (b) error correction code length, and (c) data packet length; and

processing said error corrected data.

C.1. Correspondence of Patent Claims to Proposed Count 2

In accordance with 37 C.F.R. § 1.607(a)(3), Applicant identifies that claims 14, 15, and 20 of the `170 Patent correspond to proposed Count 2. This correspondence is explained as follows.

Independent claims 14 and 20 of the `170 Patent correspond to proposed Count 2. The only difference between these claims and proposed Count 2 is the "plurality of code rates" feature discussed above at part B.1. of this paper. For the reasons discussed above, this is not a novel feature worthy of patentability separate from the proposed Count.

The correspondence of claims 14 and 20 of the `170 Patent to proposed Count 2 is set out in tabular form in Attachment C.

Dependent claim 15 of the `170 Patent also corresponds to proposed Count 2. That is because this dependent claim describes in greater detail an aspect of the same invention to which proposed Count 2 is directed.

C.2. Correspondence of Application Claims to Proposed Count 2

In accordance with 37 C.F.R. § 1.607(a)(4), Applicant identifies that claims 32-35, 43, and 44 of this application correspond to proposed Count 2. This correspondence is explained as follows.

Independent claim 32 of this application corresponds exactly to the first part of proposed Count 2, and independent claim 43 of this application corresponds exactly to the second part of proposed Count 2. Independent claims 33 and 44 of this application also correspond to proposed Count 2. The only difference between claims 33 and 44 and proposed Count 2 is that the former recite signals "encoded at different times in accordance with different ones of said plurality of different signal formats," whereas the latter recites signals "encoded in different signal formats for different transmission modes." For the reasons discussed above at part B.2. of this paper, this minor difference in phrasing is not one worthy of patentable distinction with respect to the Count.

The correspondence of claims 33 and 44 of the present application to proposed Count 2 is set out in tabular form in Attachment D.

Dependent claims 34 and 35 of the present application also correspond to proposed Count 2. That is because these dependent claims describe in greater detail various aspects of the same invention to which proposed Count 2 is directed.

D. Proposed Count 3 for Interference

In accordance with 37 C.F.R. § 1.607(a)(2), Applicant proposes the following Count 3 directed to adaptive deinterleaving and adaptive error correcting, drafted in the "or" format:

COUNT 3

In a system for receiving and adaptively processing a video signal encoded in one of a plurality of different formats suitable for satellite, terrestrial or cable transmission, apparatus comprising:

an adaptive deinterleaver for deinterleaving said encoded video signal encoded in one of a plurality of deinterleaving functions; and

an adaptive error decoder for detecting and correcting errors in said deinterleaved output, said error decoder adapting between different signal formats by changing at least one of: (a) error function type, (b) error correction code length, and (c) data packet length; and

an output signal processor for processing said error corrected data.

OR

A method of adaptively processing a video signal encoded in one of a plurality of different formats suitable for satellite, terrestrial or cable transmission, comprising the steps of:

adaptively decoding an input signal encoded in different signal formats for different transmission modes, to produce a decoded output;

selecting a deinterleaving function from a plurality of deinterleaving functions;

adaptively deinterleaving said decoded output using said selected deinterleaving function;

detecting errors in deinterleaved output of different signal formats;

adaptively correcting an error in deinterleaved output of different signal formats by changing at least one of: (a) error function type, (b) error correction code length, and (c) data packet length; and

processing said error corrected data.

D.1. Correspondence of Patent Claims to Proposed Count 3

In accordance with 37 C.F.R. § 1.607(a)(3), Applicant identifies that claims 16-18, 21, and 22 of the `170 Patent correspond to proposed Count 3. This correspondence is explained as follows.

Independent claims 16 and 21 of the `170 Patent correspond to proposed Count 3. The salient difference between claim 16 and proposed Count 3 resides in that claim 16 recites operation "in accordance with a deinterleaving function selected from a plurality of deinterleaving functions," whereas proposed Count 3 recites operation via "one of a plurality of deinterleaving functions." There is no difference in meaning between these two phrasings.

Claim 21 of the `170 Patent contains a latent indefiniteness because the recitation "said decoded output" lacks antecedent basis in the claim. The claimed method thus must be read as implicitly including a step of decoding which produces a "decoded output." Proposed Count 3 sets forth explicitly that which is implicit in claim 21 of the `170 Patent, i.e., a decoding step. There is no other difference between this claim and proposed Count 3.

The correspondence of independent claims 16 and 21 of the `170 Patent to proposed Count 3 is set out in tabular form in Attachment E.

Dependent claims 17, 18, and 22 of the `170 Patent also correspond to Count 3. These dependent claims describe in greater detail various aspects of the same invention to which proposed Count 3 is directed.

D.2. Correspondence of Application Claims to Proposed Count 3

In accordance with 37 C.F.R. § 1.607(a)(4), Applicant identifies that claims 36-40 and 45-47 of this application correspond to proposed Count 3. This correspondence is explained as follows.

Independent claim 36 of this application corresponds exactly to the first part of proposed Count 3, and independent claim 45 of this application corresponds exactly to the second part of proposed Count 3. Independent claims 37 and 46 of this application also correspond to proposed Count 3.

Claim 37 recites "deinterleaving said decoded video signal in accordance with a deinterleaving function selected from a plurality of deinterleaving functions," while proposed Count 3 recites "deinterleaving said encoded video signal encoded in one of a plurality of deinterleaving functions." There is no meaningful difference between these two phrasings. Although one recites "encoded" and the other "decoded," this is not an important difference since in the context of digital communications every signal may be described both as being encoded and decoded, depending upon whether reference is being made with respect to a

preceding or following processing step. Such ambiguity probably cannot be escaped entirely in an art such as digital communications where so many levels of coding are layered over one another as a matter of course. What is important is that both phrasings are clearly referring to approximately the same point in the signal flow path.

The only salient difference between claim 46 and the second part of proposed Count 3 is that the former recites signals "encoded at different times in accordance with different ones of said plurality of different signal formats," whereas the latter recites signals "encoded in different signal formats for different transmission modes." For the reasons discussed above at part B.2. of this paper, this minor difference in phrasing is not one worthy of patentable distinction with respect to the Count.

The correspondence of claims 37 and 46 of the present application to proposed Count 3 is set out in tabular form in Attachment F.

Dependent claims 38-40 and 47 of the present application also correspond to proposed Count 3. That is because these dependent claims describe in greater detail various aspects of the same invention to which proposed Count 3 is directed.

E. Proposed Count 4 for Interference

In accordance with 37 C.F.R. § 1.607(a)(2), Applicant proposes Count 4 as follows:

COUNT 4

In a system for receiving and adaptively processing a carrier modulated with video information in one of a plurality of different modulation formats

suitable for satellite, terrestrial or cable transmission, an adaptive demodulator network comprising:

a timing recovery network for recovering timing data from said modulated carrier;

an adaptive carrier recovery network responsive to said timing data for recovering said video information from said carrier in said different modulation formats; and

a selectable decision network, included in said adaptive carrier recovery network, for applying a set of decision thresholds to data provided by said carrier recovery network to recover said video information, said set of decision thresholds being selected from a plurality of sets of decision thresholds suitable for different decision formats.

E.1. Correspondence of Patent Claims to Proposed Count 4

In accordance with 37 C.F.R. § 1.607(a)(3), Applicant identifies that claims 1-9 of the `253 Patent correspond to proposed Count 4. This correspondence is explained as follows.

Independent claim 1 of the `253 Patent corresponds to proposed Count 4. The only differences between independent claim 1 and proposed Count 4 are that the claim recites "a selectable slicer network", whereas the Count recites "a selectable decision network", and the claim recites that the decision thresholds are selected "for said different modulation formats", whereas the proposed count recites that the decision thresholds are selected "from a plurality of sets of decision thresholds suitable for different decision formats." With respect to the former difference, the phrasing in proposed Count 4 is a broader description using terminology that is more recognized in the industry, and that is suitable to the mutual proofs of the parties. With

respect to the latter difference, the proposed Count is phrased using broader terminology and is suitable to the mutual proofs of the parties.

The correspondence of claim 1 of the `253 Patent to proposed Count 4 is set out in tabular form in Attachment G.

Dependent claims 2-8 also correspond to proposed Count 4. These dependent claims describe in greater detail various aspects of the same invention to which proposed Count 4 is directed.

E.2. Correspondence of Application Claims to Proposed Count 4

In accordance with 37 C.F.R. § 1.607(a)(4), Applicant identifies that claims 48-54 and 57-60 of this application correspond to proposed Count 4. This correspondence is explained as follows.

Independent claim 48 of this application corresponds exactly to proposed Count 4. Independent claim 49 of this application also corresponds to proposed Count 4. The only difference between claim 49 and proposed Count 4 is that the claim recites (at the very end) "different modulation formats," whereas the Count recites (also at the very end) "different decision formats." The proposed Count 4 is phrased using broader terminology that is suited to the mutual proofs of the parties.

The correspondence between claim 49 of the present application and proposed Count 4 is set out in tabular form in Attachment H.

Dependent claims 50-54 and 57-60 of this application also correspond to proposed Count 4. That is because these dependent claims describe in greater detail various aspects of the same invention to which proposed Count 4 is directed.

F. Proposed Count 5 for Interference

In accordance with 37 C.F.R. § 1.607(a)(2), Applicant proposes Count 5 as follows:

COUNT 5

In a receiver for adaptively processing an input signal containing data in one of a plurality of different input formats and wherein said data is encoded in one of a plurality of different coding formats, apparatus comprising:

an adaptive timing recovery network for recovering timing information from said input signal as a function of a received input signal format;

an adaptive data recovery network responsive to said timing information for recovering said data;

a selectable decision network, included in said data recovery network, for applying a set of decision thresholds to data provided by said data recovery network to recover said data, said set of decision thresholds being selected from a plurality of sets of decision thresholds suitable for different input signal formats; and

an adaptive decoder for selectively decoding said recovered data as a function of a received data coding format to produce recovered and decoded output data.

F.1. Correspondence of Patent Claims to Proposed Count 5

In accordance with 37 C.F.R. § 1.607(a)(3), Applicant identifies that patent claims 14 and 17 of the `253 Patent correspond to proposed Count 5. This correspondence is explained as follows.

Independent claim 14 of the `253 Patent corresponds to proposed Count 5. One difference between independent claim 14 and proposed Count 5 is that the former recites a "selectable slicer network," whereas the latter recites a "selectable decision network." The phrasing in proposed Count 5 is a broader description using terminology that is more recognized in the industry, and that is suitable to the mutual proofs of the parties. Another difference between independent claim 14 and the proposed Count 5 is that the claim recites "said carrier recovery network" in one place, whereas the Count recites "said data recovery network." This reflects a latent indefiniteness in claim 14 (i.e., lack of antecedent basis) that is not carried forward in the proposed Count.

The correspondence of claim 14 of the `253 Patent to proposed Count 5 is set out in tabular form in Attachment I.

Dependent claim 17 of the `253 Patent also corresponds to proposed Count 5, because claim 17 describes in more detail aspects of the same invention to which proposed Count 5 is directed.

F.2. <u>Correspondence of Application Claims to Proposed Count 5</u>

In accordance with 37 C.F.R. § 1.607(a)(4), Applicant identifies that claims 61-66 of this application correspond to proposed Count 5. This correspondence is explained as follows.

Independent claim 61 of this application corresponds exactly to proposed Count 5. Independent claims 62 and 63 of this application also correspond to proposed Count 5. The only difference between claim 62 and proposed Count 5 is that the claim consistently refers to a "carrier recovery network" while Count 5 consistently refers to a "data recovery network." According to the disclosure of the `253 Patent, these are merely different formulations of words for describing the same thing. Please refer to claim 17 of the `253 Patent which equates the two phrases.

The only salient difference between claim 63 and proposed Count 5 is that claim 63 recites "a selectable decision network, included in one of said adaptive decoder and said data recovery network" whereas the Count recites "a selectable decision network, included in said data recovery network." As a matter of practical effect, there is no difference in claim scope between these two phrasings since the recitation in claim 63 is actually two limitations recited as alternative *options* to one another.

The correspondence of independent claims 62 and 63 of the present application with proposed Count 5 is set out in tabular form in Attachment J.

Dependent claims 64-66 of this application also correspond to proposed Count 5. That is because these dependent claims describe in greater detail various aspects of the same invention to which proposed Count 5 is directed.

G. Proposed Count 6 for Interference

In accordance with 37 C.F.R. § 1.607(a)(2), Applicant proposes Count 6 as follows:

COUNT 6

In a receiver for adaptively processing a carrier modulated with data in one of a plurality of different modulation formats suitable for satellite, terrestrial or cable transmission and wherein said modulating data is encoded in one of a plurality of different formats suitable for satellite, terrestrial or cable transmission, apparatus comprising:

an adaptive timing recovery network for recovering timing data from said modulated carrier as a function of a received carrier modulation format;

an adaptive carrier recovery network responsive to said timing data for recovering said modulating data from said modulated carrier;

a selectable decision network, included in said carrier recovery network, for applying a set of decision thresholds to data provided by said carrier recovery network to recover said modulating data, said set of decision thresholds being selected from a plurality of sets of decision thresholds suitable for said different modulation formats; and

an adaptive decoder for selectively decoding said recovered modulating data as a function of a received data encoding format to produce demodulated and decoded output data.

G.1. Correspondence of Patent Claims to Proposed Count 6

In accordance with 37 C.F.R. § 1.607(a)(3), Applicant identifies that claims 18-21 of the `253 Patent correspond to proposed Count 6. This correspondence is explained as follows.

Independent claim 18 of the `253 Patent tracks very closely with proposed Count 6, however, independent claim 21 of the `253 Patent contains a few limitations which are not in proposed Count 6. Please refer to Attachment K, wherein the correspondence of independent claims 18 and 21 of the `253 Patent with proposed Count 6 are set out in tabular form.

The only salient difference between claim 18 and proposed Count 6 is the selectable slicer network/selectable decision network issue, which was discussed above in part E.1. of this paper. As to independent claim 21, the "deinterleaver" and "descrambler" aspects of the invention are well known features in the art and are merely the natural result of the choices to use the well-known Reed-Solomon coding scheme. Incidentally, Reed-Solomon coding is common to the disclosures of the parties. The "error correcting" aspect of the invention, as well as the choice of a Viterbi decoding algorithm, as recited in claim 21, along with the "error estimation" aspects of the invention that are recited in dependent claims 19 and 20, are all typical features in the television art and do not make those claims independently patentable over the proposed Count 6.

G.2. Correspondence of Application Claims to Proposed Count 6

In accordance with 37 C.F.R. § 1.607(a)(4), Applicant identifies that claims 67-75 of this application correspond to proposed Count 6. This correspondence is explained as follows.

Independent claim 67 of this application corresponds exactly to proposed Count 6. Independent claims 70 and 73 of this application correspond to proposed Count 6 with minor differences. Both claims 70 and 73 track closely the language of proposed Count 6 (exception: reciting "video data" rather than the broader "data"), until the ends of the claims wherein they recite a number of additional features. As explained above in part G.1. of this paper, the "deinterleaver," "error correcting," and "derandomizer" aspects of the invention which are recited in claims 70 and 73 are typical in this art, particular in the context of a system that

implements Reed-Solomon coding. Thus, despite these additional limitations, claims 70 and 73 correspond to the proposed Count 6.

The correspondence of independent claims 70 and 73 of the present application with proposed Count 6 are set out in tabular form in Attachment L.

Dependent claims 68, 69, 71, 72, 74, and 75 of this application also correspond to proposed Count 6. That is because these dependent claims describe in greater detail various aspects of the same invention to which proposed Count 6 is directed.

H. Proposed Count 7 for Interference

In accordance with 37 C.F.R. § 1.607(a)(2), Applicant proposes the following Count 7 directed to demodulating and decoding, drafted in the "or" format:

COUNT 7

In a system for receiving a modulated signal from multiple types of transmission channels, said signal being representative of compressed digital data coded in one of a plurality of coding formats and exhibiting one of a plurality of modulation formats, a method comprising the steps of:

selecting a modulation format for demodulation from among modulation formats including a QAM format and including another modulation format;

demodulating said modulated signal according to said selected modulation format to produce a demodulated signal;

selecting a coding format for decoding from among said plurality of coding formats; and

decoding said demodulated signal according to said selected coding format to produce a demodulated and decoded signal.

OR

In a system for receiving a modulated signal from multiple types of transmission channels, said signal being representative of compressed digital data coded in one of a plurality of coding formats and exhibiting one of a plurality of modulation formats, said multiple types of transmission channels including at least two channels from among satellite, cable and terrestrial channels, signal processing apparatus comprising:

a demodulator for selectively demodulating said modulated signal from among modulation formats including PAM and including QAM to produce a demodulated signal; and

a decoder for selectively decoding said demodulated signal from among coding formats including trellis coded formats to produce a demodulated and decoded signal.

H.1. <u>Correspondence of Patent Claims to Proposed Count 7</u>

In accordance with 37 C.F.R. § 1.607(a)(3), Applicant identifies that claims 1-9 of the `471 Patent correspond to proposed Count 7. This correspondence is explained as follows.

Independent claim 1 of the `471 Patent corresponds to the first part of proposed Count 7, and independent claim 6 of the `471 Patent corresponds to the second part of proposed Count 7. The only difference between independent claim 1 and the first part of proposed Count 7 is that claim 1 recites particularly the PSK modulation scheme. Likewise, one difference between independent claim 6 and the second part of proposed Count 7 is that claim 6 recites particularly the PSK modulation scheme. Recitation of PSK modulation is not sufficient to distinguish

independent claims 1 and 6 of the `471 Patent from proposed Count 7, because PSK (i.e., Phase Shift Keying) is one of many long well-known digital modulation techniques and its selection for a digital communications system based on its known properties and situational suitability is not an innovation worthy of distinction from proposed Count 7.

Another difference between claim 6 of the `471 Patent and proposed Count 7 is that claim 6 particularly recites the use of "punctured coded" coding formats. Punctured coded coding formats are adaptive in that they make use of different code rates depending upon circumstances, such as channel quality. Punctured coding is a well known technique and is simply the natural result of using a coding scheme such as PAM (i.e., pulse amplitude modulation), which claim 6 also recites. Those of ordinary skill in this art have used punctured coding with PAM schemes (e.g., VSB) for a long time. Thus, the recitation of "punctured coded" is not a difference worthy of distinguishing claim 6 from the proposed Count 7.

The correspondence of independent claims 1 and 6 of the `471 Patent to proposed Count 7 is set out in tabular form in Attachment M.

Dependent claims 2-5 and 7-9 also correspond to proposed Count 7. That is because these dependent claims describe in greater detail various aspects of the same invention to which proposed Count 7 is directed.

H.2. Correspondence of Application Claims to Proposed Count 7

In accordance with 37 C.F.R. § 1.607(a)(4), Applicant identifies that claims 79, 80, and 82-92 of this application correspond to proposed Count 7. This correspondence is explained as follows.

Independent claim 79 of this application corresponds exactly to the first part of proposed Count 7, and independent claim 88 of this application corresponds exactly to the second part of proposed Count 7. Independent claim 87 of this application also corresponds to proposed Count 7. The only difference between claim 87 and the second part of proposed Count 7 is that claim 87 particularly recites the use of "punctured coded" coding formats. As explained above in part H.1. of this paper, this is not a difference of sufficient import so as to distinguish claim 87 from the proposed Count.

The correspondence of independent claims 79 and 87 of the present application to proposed Count 7 is set out in tabular form in Attachment N.

Dependent claims 80 and 82-86 of this application correspond to the first part of proposed Count 7, and dependent claims 89-92 of this application corresponds to the second part of proposed Count 7. That is because these dependent claims describe in greater detail various aspects of the same invention to which proposed Count 7 is directed.

I. Proposed Count 8 for Interference

In accordance with 37 C.F.R. § 1.607(a)(2), Applicant proposes Count 8 as follows:

COUNT 8

In a system for receiving a modulated signal from multiple types of transmission channels, said signal being representative of compressed digital data

coded in one of a plurality of coding formats and exhibiting one of a plurality of modulation formats, a method comprising the steps of:

selecting a modulation format for demodulation from among said plurality of modulation formats;

demodulating said modulated signal according to said selected modulation format to produce a demodulated signal;

selecting a coding format for decoding from among coding formats including trellis coded formats; and

decoding said demodulated signal according to said selected coding format to produce a demodulated and decoded signal.

I.1. Correspondence of Patent Claims to Proposed Count 8

In accordance with 37 C.F.R. § 1.607(a)(3), Applicant identifies that claims 10-14 of the `471 Patent correspond to proposed Count 8. This correspondence is explained as follows.

Independent claim 10 of the `471 Patent corresponds to Count 8. The only difference between independent claim 10 and proposed Count 8 is that claim 10 particularly recites the use of "punctured coded" coding formats. As explained above in part H.1. of this paper, this is not a difference of sufficient import so as to distinguish claim 10 from the proposed Count.

The correspondence of independent claim 10 of the `471 Patent with proposed Count 8 is set out in tabular form in Attachment O.

Dependent claims 11-14 also correspond to proposed Count 8. That is because these dependent claims describe in greater detail various aspects of the same invention to which proposed Count 8 is directed.

I.2. Correspondence of Application Claims to Proposed Count 8

In accordance with 37 C.F.R. § 1.607(a)(4), Applicant identifies that claims 93-98 and 100 of this application correspond to proposed Count 8. This correspondence is explained as follows.

Independent claim 94 of this application corresponds exactly to proposed Count 8. Independent claim 93 of this application also corresponds to proposed Count 8. The only difference between claim 93 and proposed Count 8 is that claim 93 particularly recites the use of "punctured coded" coding formats. As explained above in part H.1. of this paper, this is not a difference of sufficient import so as to distinguish claim 93 from the proposed Count.

The correspondence of independent claim 93 of the present application with proposed Count 8 is set out in tabular form in Attachment P.

Dependent claims 95-98 and 100 of this application also correspond to proposed Count 8. That is because these dependent claims describe in greater detail various aspects of the same invention to which proposed Count 8 is directed.

J. Application Of The Terms Of Application Claims To The Disclosure Of The Application

In accordance with 37 C.F.R. § 1.607(a)(5), Applicant applies the terms of the new application claims 2 through 100 to Applicant's own disclosure. Please refer to Attachment Q, which sets out in detail how the Patel *et al.* (i.e., Applicant's) disclosure supports each and every limitation of claims 2 through 100.

K. Conclusion

For the above reasons, Applicant respectfully submits that it is appropriate for the Examiner to declare an interference between the present application and U.S.P. 5,666,170, U.S.P. 5,671,253, and U.S.P. 5,717,471. Early notice of such is respectfully requested.

Respectfully submitted,

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Date: November 9, 1999

Attachment A

PROPOSED COUNT 1	CLAIMS 1, 5 & 19 OF THE `170 PATENT
In a system for receiving and adaptively processing a video signal encoded in one of a plurality of different formats suitable for satellite, terrestrial or cable transmission modes, apparatus comprising:	In a system for receiving and adaptively processing a video signal encoded in one of a plurality of different formats suitable for satellite, terrestrial or cable transmission modes, apparatus comprising: (claims 1 and 5)
an adaptive decoder for providing a decoded output from an input signal encoded in different signal formats for different transmission modes;	an adaptive decoder for providing a decoded output as a function of a code rate selected from a plurality of code rates, said decoded output being provided from an input signal encoded in different signal formats for different transmission modes; (claim 1) an adaptive decoder for providing a first decoded output as a function of a code rate selected from a plurality of code rates; (claim 5)
an adaptive deinterleaver for deinterleaving said decoded output in accordance with a deinterleaving function selected from a plurality of deinterleaving functions wherein said adaptive deinterleaver is configured with said selected deinterleaving function; and	an adaptive deinterleaver for deinterleaving said decoded output in accordance with a deinterleaving function selected from a plurality of deinterleaving functions, wherein said adaptive deinterleaver is configured with said selected deinterleaving function; and (claim 1) an adaptive deinterleaver for deinterleaving said first decoded output in accordance with a deinterleaving function selected from a plurality of deinterleaving functions; and (claim 5)
an output signal processor for processing deinterleaved output data.	an output signal processor for processing deinterleaved output data. (claim 1) an output signal processor for processing deinterleaved output data wherein said adaptive decoder is bypassed when said encoded video signal exhibits a predetermined format. (claim 5)
OR	
A method for adaptively processing a video signal encoded in one of a plurality of different	A method for adaptively processing a video signal encoded in one of a plurality of different

PROPOSED COUNT 1	CLAIMS 1, 5 & 19 OF THE `170 PATENT
formats suitable for satellite, terrestrial or cable transmission modes, comprising the steps of:	formats suitable for satellite, terrestrial or cable transmission modes, comprising the steps of: (claim 19)
adaptively decoding an input signal to provide a decoded output, said input signal being encoded in different signal formats for different transmission modes;	adaptively decoding an input signal as a function of a code rate selected from a plurality of code rates to provide a decoded output, said input signal being encoded in different signal formats for different transmission modes; (claim 19)
selecting a deinterleaving function from a plurality of deinterleaving functions;	selecting a deinterleaving function from a plurality of deinterleaving functions; (claim 19)
configuring an adaptive deinterleaver with said selected deinterleaving function;	configuring said adaptive deinterleaver with said selected deinterleaving function; (claim 19)
adaptively deinterleaving said decoded output using said selected deinterleaving function; and	adaptively deinterleaving said decoded output using said selected deinterleaving function; and (claim 19)
processing said deinterleaved data.	processing said deinterleaved data. (claim 19)

Attachment B

Proposed Count 1	**Claims 3 & 42 of the Patel *et al.* Application**
In a system for receiving and adaptively processing a video signal encoded in one of a plurality of different formats suitable for satellite, terrestrial or cable transmission modes, apparatus comprising:	In a system for receiving and adaptively processing a video signal encoded in one of a plurality of different signal formats suitable for satellite, terrestrial or cable transmission modes, apparatus comprising: (claim 3)
an adaptive decoder for providing a decoded output from an input signal encoded in different signal formats for different transmission modes;	an adaptive decoder for providing a decoded output from an input signal encoded at different times in accordance with different ones of said plurality of different signal formats; (claim 3)
an adaptive deinterleaver for deinterleaving said decoded output in accordance with a deinterleaving function selected from a plurality of deinterleaving functions wherein said adaptive deinterleaver is configured with said selected deinterleaving function; and	an adaptive deinterleaver for deinterleaving said decoded output in accordance with a deinterleaving function selected from a plurality of deinterleaving functions, wherein said adaptive deinterleaver is configured with said selected deinterleaving function; and (claim 3)
an output signal processor for processing deinterleaved output data.	an output signal processor for processing deinterleaved output data. (claim 3)
OR	
A method for adaptively processing a video signal encoded in one of a plurality of different formats suitable for satellite, terrestrial or cable transmission modes, comprising the steps of:	A method for adaptively processing a video signal encoded in one of a plurality of different formats suitable for satellite, terrestrial or cable transmission modes, comprising the steps of: (claim 42)
adaptively decoding an input signal to provide a decoded output, said input signal being encoded in different signal formats for different transmission modes;	adaptively decoding an input signal, as encoded at different times in accordance with different ones of said plurality of different signal formats, to provide a decoded output signal; (claim 42)
selecting a deinterleaving function from a plurality of deinterleaving functions;	selecting a deinterleaving function from a plurality of deinterleaving functions; (claim 42)
configuring an adaptive deinterleaver with said selected deinterleaving function;	configuring an adaptive deinterleaver with said selected deinterleaving function; (claim 42)
adaptively deinterleaving said decoded output	adaptively deinterleaving said decoded output

Proposed Count 1	**Claims 3 & 42 of the Patel *et al.* Application**
using said selected deinterleaving function; and	signal using said adaptive deinterleaver configured with said selected deinterleaving function; and (claim 42)
processing said deinterleaved data.	processing said deinterleaved data. (claim 42)

Attachment C

Proposed Count 2	**Claims 14 & 20 of the `170 Patent**
In a system for receiving and adaptively processing a video signal encoded in one of a plurality of different formats suitable for satellite, terrestrial or cable transmission modes, apparatus comprising:	In a system for receiving and adaptively processing a video signal encoded in one of a plurality of different formats suitable for satellite, terrestrial or cable transmission modes, apparatus comprising: (claim 14)
an adaptive decoder for providing a decoded output from an input signal encoded in different signal formats for different transmission modes;	an adaptive decoder for providing a decoded output as a function of a code rate selected from a plurality of code rates, said decoded output being provided from an input signal encoded in different signal formats for different transmission modes; (claim 14)
an adaptive error decoder for detecting and correcting errors in said decoded output, said error decoder adapting between different signal formats by changing at least one of: (a) error function type, (b) error correction code length, and (c) data packet length; and	an adaptive error decoder for detecting and correcting errors in said decoded output, said error decoder adapting between different signal formats by changing at least one of: (a) error function type, (b) error correction code length, and (c) data packet length; and (claim 14)
an output signal processor for processing said error corrected data.	an output signal processor for processing said error corrected data. (claim 14)
OR	
A method of adaptively processing a video signal encoded in one of a plurality of different formats suitable for satellite, terrestrial or cable transmission, comprising the steps of:	A method of adaptively processing a video signal encoded in one of a plurality of different formats suitable for satellite, terrestrial or cable transmission, comprising the steps of: (claim 20)
adaptively decoding an input signal encoded in different signal formats for different transmission modes to provide a decoded output;	selecting a code rate from a plurality of code rates; adaptively decoding an input signal encoded in different signal formats for different transmission modes as a function of said selected code rate to provide a decoded output; (claim 20)
adaptively detecting errors in said decoded output;	adaptively detecting errors in said decoded output; (claim 20)
adaptively correcting said detected errors in	adaptively correcting said detected errors in

Proposed Count 2	Claims 14 & 20 of the `170 Patent
said decoded output by changing at least one of: (a) error function type, (b) error correction code length, and (c) data packet length; and	said decoded output by changing at least one of: (a) error function type, (b) error correction code length, and (c) data packet length; and (claim 20)
processing said error corrected data.	processing said error corrected data. (claim 20)

Attachment D

Proposed Count 2	**Claims 33 & 44 of the Patel *et al.* Application**
In a system for receiving and adaptively processing a video signal encoded in one of a plurality of different formats suitable for satellite, terrestrial or cable transmission modes, apparatus comprising:	In a system for receiving and adaptively processing a video signal encoded in one of a plurality of different formats suitable for satellite, terrestrial or cable transmission modes, apparatus comprising: (claim 33)
an adaptive decoder for providing a decoded output from an input signal encoded in different signal formats for different transmission modes;	an adaptive decoder for providing a decoded output from an input signal encoded at different times in accordance with different ones of said plurality of different signal formats; (claim 33)
an adaptive error decoder for detecting and correcting errors in said decoded output, said error decoder adapting between different signal formats by changing at least one of: (a) error function type, (b) error correction code length, and (c) data packet length; and	an adaptive error decoder for detecting and correcting errors in said decoded output, said error decoder adapting between ones of said plurality of different signal formats by changing at least one of: (a) error function type, (b) error correction code length, and (c) data packet length; and (claim 33)
an output signal processor for processing said error corrected data.	an output signal processor for processing said error corrected data. (claim 33)
OR	
A method of adaptively processing a video signal encoded in one of a plurality of different formats suitable for satellite, terrestrial or cable transmission, comprising the steps of:	A method of adaptively processing a video signal encoded in one of a plurality of different formats suitable for satellite, terrestrial or cable transmission, comprising the steps of: (claim 44)
adaptively decoding an input signal encoded in different signal formats for different transmission modes to provide a decoded output;	adaptively decoding an input signal, as encoded at different times in accordance with different ones of said plurality of different signal formats, to provide a decoded output signal; (claim 44)
adaptively detecting errors in said decoded output;	adaptively detecting errors in said decoded output signal; (claim 44)
adaptively correcting said detected errors in said decoded output by changing at least one of: (a) error function type, (b) error correction	adaptively correcting said detected errors in said decoded output signal by changing at least one of: (a) error function type, (b) error correction

Proposed Count 2	**Claims 33 & 44 of the Patel *et al.* Application**
code length, and (c) data packet length; and	code length, and (c) data packet length; and (claim 44)
processing said error corrected data.	processing said error corrected data. (claim 44)

Attachment E

Proposed Count 3	Claims 16 & 21 of the `170 Patent
In a system for receiving and adaptively processing a video signal encoded in one of a plurality of different formats suitable for satellite, terrestrial or cable transmission, apparatus comprising:	In a system for receiving and adaptively processing a video signal encoded in one of a plurality of different formats suitable for satellite, terrestrial or cable transmission, apparatus comprising: (claim 16)
an adaptive deinterleaver for deinterleaving said encoded video signal encoded in one of a plurality of deinterleaving functions; and	an adaptive deinterleaver for deinterleaving said encoded video signal in accordance with a deinterleaving function selected from a plurality of deinterleaving functions; and (claim 16)
an adaptive error decoder for detecting and correcting errors in said deinterleaved output, said error decoder adapting between different signal formats by changing at least one of: (a) error function type, (b) error correction code length, and (c) data packet length; and	an adaptive error decoder for detecting and correcting errors in said deinterleaved output, said error decoder adapting between different signal formats by changing at least one of: (a) error function type, (b) error correction code length, and (c) data packet length; and (claim 16)
an output signal processor for processing said error corrected data.	an output signal processor for processing said error corrected data. (claim 16)
OR	
A method of adaptively processing a video signal encoded in one of a plurality of different formats suitable for satellite, terrestrial or cable transmission, comprising the steps of:	A method for adaptively processing a video signal encoded in one of a plurality of different formats suitable for satellite, terrestrial or cable transmission, comprising the steps of: (claim 21)
adaptively decoding an input signal encoded in different signal formats for different transmission modes, to produce a decoded output;	*<Claim 21 does not expressly recite a corresponding step of "adaptively decoding." However, a decoding step is implied since "said decoded output" is recited, without antecedent basis, in the step of "adaptively deinterleaving.">*
selecting a deinterleaving function from a plurality of deinterleaving functions;	selecting a deinterleaving function from a plurality of deinterleaving functions; (claim 21)
adaptively deinterleaving said decoded output using said selected deinterleaving function;	adaptively deinterleaving said decoded output using said selected deinterleaving function; (claim 21)
detecting errors in deinterleaved output of	detecting errors in deinterleaved output of

Proposed Count 3	Claims 16 & 21 of the `170 Patent
different signal formats;	different signal formats; (claim 21)
adaptively correcting an error in deinterleaved output of different signal formats by changing at least one of: (a) error function type, (b) error correction code length, and (c) data packet length; and	adaptively correcting an error in deinterleaved output of different signal formats by changing at least one of: (a) error function type, (b) error correction code length, and (c) data packet length; and (claim 21)
processing said error corrected data.	processing said error corrected data. (claim 21)

Attachment F

Proposed Count 3	**Claims 37 & 46 of the Patel *et al.* Application**
In a system for receiving and adaptively processing a video signal encoded in one of a plurality of different formats suitable for satellite, terrestrial or cable transmission, apparatus comprising:	In a system for receiving and adaptively processing a video signal encoded in one of a plurality of different signal formats suitable for satellite, terrestrial or cable transmission, apparatus comprising: (claim 37)
an adaptive deinterleaver for deinterleaving said encoded video signal encoded in one of a plurality of deinterleaving functions; and	an adaptive deinterleaver for deinterleaving said decoded video signal in accordance with a deinterleaving function selected from a plurality of deinterleaving functions; and (claim 37)
an adaptive error decoder for detecting and correcting errors in said deinterleaved output, said error decoder adapting between different signal formats by changing at least one of: (a) error function type, (b) error correction code length, and (c) data packet length; and	an adaptive error decoder for detecting and correcting errors in said deinterleaved output, said error decoder adapting between ones of said plurality of different signal formats by changing at least one of: (a) error function type. (b) error correction code length, and (c) data packet length; and (claim 37)
an output signal processor for processing said error corrected data.	an output signal processor for processing said error corrected data. (claim 37)
OR	
A method of adaptively processing a video signal encoded in one of a plurality of different formats suitable for satellite, terrestrial or cable transmission, comprising the steps of:	A method for adaptively processing a video signal encoded in one of a plurality of different formats suitable for satellite, terrestrial or cable transmission, comprising the steps of: (claim 46)
adaptively decoding an input signal encoded in different signal formats for different transmission modes, to produce a decoded output;	adaptively decoding an input signal, as encoded at different times in accordance with different ones of said plurality of different signal formats, to provide a decoded output signal; (claim 46)
selecting a deinterleaving function from a plurality of deinterleaving functions;	selecting a deinterleaving function from a plurality of deinterleaving functions; (claim 46)
adaptively deinterleaving said decoded output using said selected deinterleaving function;	adaptively deinterleaving said decoded output signal using said selected deinterleaving function;

Proposed Count 3	**Claims 37 & 46 of the Patel *et al.* Application**
	(claim 46)
detecting errors in deinterleaved output of different signal formats;	detecting errors in deinterleaved output signal of different signal formats; (claim 46)
adaptively correcting an error in deinterleaved output of different signal formats by changing at least one of: (a) error function type, (b) error correction code length, and (c) data packet length; and	adaptively correcting an error in deinterleaved output signal of different signal formats by changing at least one of: (a) error function type. (b) error correction code length. and (c) data packet length; and (claim 46)
processing said error corrected data.	processing said error corrected data. (claim 46)

Attachment G

Proposed Count 4	Claim 1 of the `253 Patent
In a system for receiving and adaptively processing a carrier modulated with video information in one of a plurality of different modulation formats suitable for satellite, terrestrial or cable transmission, an adaptive demodulator network comprising:	In a system for receiving and adaptively processing a carrier modulated with video information in one of a plurality of different modulation formats suitable for satellite, terrestrial or cable transmission, an adaptive demodulator network comprising:
a timing recovery network for recovering timing data from said modulated carrier;	a timing recovery network for recovering timing data from said modulated carrier;
an adaptive carrier recovery network responsive to said timing data for recovering said video information from said carrier in said different modulation formats; and	an adaptive carrier recovery network responsive to said timing data for recovering said video information from said carrier in said different modulation formats; and
a selectable decision network, included in said adaptive carrier recovery network, for applying a set of decision thresholds to data provided by said carrier recovery network to recover said video information, said set of decision thresholds being selected from a plurality of sets of decision thresholds suitable for different decision formats.	a selectable slicer network, included in said adaptive carrier recovery network, for applying a set of decision thresholds to data provided by said carrier recovery network to recover said video information, said set of decision thresholds being selected from a plurality of sets of decision thresholds suitable for said different modulation formats.

Attachment H

Proposed Count 4	Claim 49 of the Patel *et al.* Application
In a system for receiving and adaptively processing a carrier modulated with video information in one of a plurality of different modulation formats suitable for satellite, terrestrial or cable transmission, an adaptive demodulator network comprising:	In a system for receiving and adaptively processing a carrier modulated with video information in one of a plurality of different modulation formats suitable for satellite, terrestrial or cable transmission, an adaptive demodulator network comprising:
a timing recovery network for recovering timing data from said modulated carrier;	a timing recovery network for recovering timing data from said modulated carrier;
an adaptive carrier recovery network responsive to said timing data for recovering said video information from said carrier in said different modulation formats; and	an adaptive carrier recovery network responsive to said timing data for recovering said video information from said carrier in said different modulation formats; and
a selectable decision network, included in said adaptive carrier recovery network, for applying a set of decision thresholds to data provided by said carrier recovery network to recover said video information, said set of decision thresholds being selected from a plurality of sets of decision thresholds suitable for different decision formats.	a selectable decision network, included in said adaptive carrier recovery network, for applying a set of decision thresholds to data provided by said carrier recovery network to recover said video information, said set of decision thresholds being selected from a plurality of sets of decision thresholds suitable for said different modulation formats.

Attachment I

Proposed Count 5	Claim 14 of the `253 Patent
In a receiver for adaptively processing an input signal containing data in one of a plurality of different input formats and wherein said data is encoded in one of a plurality of different coding formats, apparatus comprising:	In a receiver for adaptively processing an input signal containing data in one of a plurality of different input formats and wherein said data is encoded in one of a plurality of different coding formats, apparatus comprising:
an adaptive timing recovery network for recovering timing information from said input signal as a function of a received input signal format;	an adaptive timing recovery network for recovering timing information from said input signal as a function of a received input signal format;
an adaptive data recovery network responsive to said timing information for recovering said data;	an adaptive data recovery network responsive to said timing information for recovering said data;
a selectable decision network, included in said data recovery network, for applying a set of decision thresholds to data provided by said data recovery network to recover said data, said set of decision thresholds being selected from a plurality of sets of decision thresholds suitable for different input signal formats; and	a selectable slicer network, included in said data recovery network, for applying a set of decision thresholds to data provided by said carrier recovery network to recover said data, said set of decision thresholds being selected from a plurality of sets of decision thresholds suitable for different input formats; and
an adaptive decoder for selectively decoding said recovered data as a function of a received data coding format to produce recovered and decoded output data.	an adaptive decoder for selectively decoding said recovered data as a function of a received data coding format to produce recovered and decoded output data.

Attachment J

Proposed Count 5	Claims 62 & 63 of the Patel *et al.* Application
In a receiver for adaptively processing an input signal containing data in one of a plurality of different input formats and wherein said data is encoded in one of a plurality of different coding formats, apparatus comprising:	In a receiver for adaptively processing an input signal containing data in one of a plurality of different input formats and wherein said data is encoded in one of a plurality of different coding formats, apparatus comprising: (claims 62 and 63)
an adaptive timing recovery network for recovering timing information from said input signal as a function of a received input signal format;	an adaptive timing recovery network for recovering timing information from said input signal as a function of a received input signal format; (claims 62 and 63)
an adaptive data recovery network responsive to said timing information for recovering said data;	an adaptive carrier recovery network responsive to said timing information for recovering said data; (claim 62) an adaptive data recovery network responsive to said timing information for recovering said data; (claim 63)
a selectable decision network, included in said data recovery network, for applying a set of decision thresholds to data provided by said data recovery network to recover said data, said set of decision thresholds being selected from a plurality of sets of decision thresholds suitable for different input signal formats; and	a selectable decision network, included in said carrier recovery network, for applying a set of decision thresholds to data provided by said carrier recovery network to recover said data, said set of decision thresholds being selected from a plurality of sets of decision thresholds suitable for different input signal formats; and (claim 62) a selectable decision network, included in one of said adaptive decoder and said data recovery network, for applying a set of decision thresholds to data provided by said data recovery network to recover said data, said set of decision thresholds being selected from a plurality of sets of decision thresholds suitable for different input signal formats. (claim 63)
an adaptive decoder for selectively decoding said recovered data as a function of a received data coding format to produce recovered and decoded output data.	an adaptive decoder for selectively decoding said recovered data as a function of a received data coding format to produce recovered and decoded output data. (claim 62)

Proposed Count 5	Claims 62 & 63 of the Patel *et al.* Application
	an adaptive decoder for selectively decoding the data recovered by said adaptive data recovery network, as a function of a received data coding format, to produce recovered and decoded output data; . (claim 63)

Attachment K

Proposed Count 6	Claims 18 and 21 of the `253 Patent
In a receiver for adaptively processing a carrier modulated with data in one of a plurality of different modulation formats suitable for satellite, terrestrial or cable transmission and wherein said modulating data is encoded in one of a plurality of different formats suitable for satellite, terrestrial or cable transmission, apparatus comprising:	In a receiver for adaptively processing a carrier modulated with data in one of a plurality of different modulation formats suitable for satellite, terrestrial or cable transmission and wherein said modulating data is encoded in one of a plurality of different formats suitable for satellite, terrestrial or cable transmission, apparatus comprising: (claim 18) A receiver for adaptively processing a carrier modulated with video data in one of a plurality of different modulation formats and wherein said modulating video data is encoded in one of a plurality of different formats, comprising: (claim 21)
an adaptive timing recovery network for recovering timing data from said modulated carrier as a function of a received carrier modulation format;	an adaptive timing recovery network for recovering timing data from said modulated carrier as a function of a received carrier modulation format; (claims 18 and 21)
an adaptive carrier recovery network responsive to said timing data for recovering said modulating data from said modulated carrier;	an adaptive carrier recovery network responsive to said timing data for recovering modulating data from said modulated carrier; (claims 18 and 21)
a selectable decision network, included in said carrier recovery network, for applying a set of decision thresholds to data provided by said carrier recovery network to recover said modulating data, said set of decision thresholds being selected from a plurality of sets of decision thresholds suitable for said different modulation formats;	a selectable slicer network, included in said carrier recovery network, for applying a set of decision thresholds to data provided by said carrier recovery network to recover said modulating data, said set of decision thresholds being selected from a plurality of sets of decision thresholds suitable for said different modulation formats; (claims 18 and 21)
and an adaptive decoder for selectively decoding said recovered modulating data as a function of a received data encoding format to produce demodulated and decoded output data.	and an adaptive decoder for selectively decoding said recovered modulating data as a function of a received data encoding format to produce demodulated and decoded output data. (claim 18) an adaptive Viterbi decoder for Viterbi decoding said recovered modulating data and providing

Proposed Count 6	Claims 18 and 21 of the `253 Patent
	a Viterbi decoded output as a function of a received data encoding format; an adaptive deinterleaver for deinterleaving said Viterbi decoded output and providing an output in accordance with a deinterleaving function selected from a plurality of deinterleaving functions; an adaptive error processor for error correcting said deinterleaved output to provide an error corrected output; and descrambler for descrambling said error corrected output. (claim 21)

Attachment L

Proposed Count 6	Claims 70 & 73 of the Patel *et al.* Application
In a receiver for adaptively processing a carrier modulated with data in one of a plurality of different modulation formats suitable for satellite, terrestrial or cable transmission and wherein said modulating data is encoded in one of a plurality of different formats suitable for satellite, terrestrial or cable transmission, apparatus comprising:	In a receiver for adaptively processing an input signal containing a carrier modulated with video data in one of a plurality of different modulation formats suitable for satellite, terrestrial or cable transmission and wherein said modulating video data is encoded in one of a plurality of different formats suitable for satellite, terrestrial or cable transmission, apparatus comprising: (claim 70) A receiver for adaptively processing a carrier modulated with video data in one of a plurality of different modulation formats and wherein said modulating video data is encoded in one of a plurality of different formats, comprising: (claim 73)
an adaptive timing recovery network for recovering timing data from said modulated carrier as a function of a received carrier modulation format;	an adaptive timing recovery network for recovering timing data from said modulated carrier as a function of a received carrier modulation format; (claims 70 and 73)
an adaptive carrier recovery network responsive to said timing data for recovering said modulating data from said modulated carrier;	an adaptive carrier recovery network responsive to said timing data for recovering said modulating data from said modulated carrier; (claim 70) an adaptive carrier recovery network responsive to said timing data for recovering modulating data from said modulated carrier; (claim 73)
a selectable decision network, included in said carrier recovery network, for applying a set of decision thresholds to data provided by said carrier recovery network to recover said modulating data, said set of decision thresholds being selected from a plurality of sets of decision thresholds suitable for said different modulation formats; and	a selectable decision network, included in said carrier recovery network, for applying a set of decision thresholds to data provided by said carrier recovery network to recover said modulating data, said set of decision thresholds being selected from a plurality of sets of decision thresholds suitable for different modulation formats; (claims 70 and 73)
an adaptive decoder for selectively decoding said recovered modulating data as a function of a	an adaptive decoder for decoding said recovered modulating data as a function of a received

Proposed Count 6	Claims 70 & 73 of the Patel *et al.* Application
received data encoding format to produce demodulated and decoded output data.	data coding format to produce demodulated and decoded output data; an adaptive deinterleaver for deinterleaving said demodulated and decoded output and providing a deinterleaved output in accordance with a deinterleaving function selected from a plurality of deinterleaving functions; an adaptive error processor for error correcting said deinterleaved output to provide an error corrected output; and a derandomizer for restoring said error corrected data to an original format thereof before randomization performed for transmission purposes. (claim 70) an adaptive decoder for decoding said recovered modulating data and providing a decoded output as a function of a received data encoding format; an adaptive deinterleaver for deinterleaving said decoded output and providing an output in accordance with a deinterleaving function selected from a plurality of deinterleaving functions; an adaptive error processor for error correcting said deinterleaved output to provide an error corrected output; and a derandomizer for derandomizing said error corrected output. (claim 73)

Attachment M

Proposed Count 7	Claims 1 and 6 of the `471 Patent
In a system for receiving a modulated signal from multiple types of transmission channels, said signal being representative of compressed digital data coded in one of a plurality of coding formats and exhibiting one of a plurality of modulation formats, a method comprising the steps of:	In a system for receiving a modulated signal from multiple types of transmission channels, said signal being representative of compressed digital data coded in one of a plurality of coding formats and exhibiting one of a plurality of modulation formats, a method comprising the steps of: (claim 1)
selecting a modulation format for demodulation from among modulation formats including a QAM format and including another modulation format;	selecting a modulation format for demodulation from among modulation formats including QAM and PSK; (claim 1)
demodulating said modulated signal according to said selected modulation format to produce a demodulated signal;	demodulating said modulated signal according to said selected modulation format to produce a demodulated signal; (claim 1)
selecting a coding format for decoding from among said plurality of coding formats; and	selecting a coding format for decoding from among said plurality of coding formats; and (claim 1)
decoding said demodulated signal according to said selected coding format to produce a demodulated and decoded signal.	decoding said demodulated signal according to said selected coding format to produce a demodulated and decoded signal. (claim 1)
OR	
In a system for receiving a modulated signal from multiple types of transmission channels, said signal being representative of compressed digital data coded in one of a plurality of coding formats and exhibiting one of a plurality of modulation formats, said multiple types of transmission channels including at least two channels from among satellite, cable and terrestrial channels, signal processing apparatus comprising:	In a system for receiving a modulated signal from multiple types of transmission channels, said signal being representative of compressed digital data coded in one of a plurality of coding formats and exhibiting one of a plurality of modulation formats, said multiple types of transmission channels including at least two channels from among satellite, cable and terrestrial channels, signal processing apparatus comprising: (claim 6)
a demodulator for selectively demodulating said modulated signal from among modulation formats including PAM and including QAM to produce a demodulated signal; and	a demodulator for selectively demodulating said modulated signal from among modulation formats including PAM, QAM and PSK to produce a demodulated signal; and (claim 6)

Proposed Count 7	Claims 1 and 6 of the `471 Patent
a decoder for selectively decoding said demodulated signal from among coding formats including trellis coded formats to produce a demodulated and decoded signal.	a decoder for selectively decoding said demodulated signal from among coding formats including punctured coded and trellis coded formats to produce a demodulated and decoded signal. (claim 6)

Attachment N

Proposed Count 7	Claims 79 & 87 of the Patel *et al.* Application
In a system for receiving a modulated signal from multiple types of transmission channels, said signal being representative of compressed digital data coded in one of a plurality of coding formats and exhibiting one of a plurality of modulation formats, a method comprising the steps of:	*<claim 79 corresponds exactly>*
selecting a modulation format for demodulation from among modulation formats including a QAM format and including another modulation format;	*<claim 79 corresponds exactly>*
demodulating said modulated signal according to said selected modulation format to produce a demodulated signal;	*<claim 79 corresponds exactly>*
selecting a coding format for decoding from among said plurality of coding formats; and	*<claim 79 corresponds exactly>*
decoding said demodulated signal according to said selected coding format to produce a demodulated and decoded signal.	*<claim 79 corresponds exactly>*
OR	
In a system for receiving a modulated signal from multiple types of transmission channels, said signal being representative of compressed digital data coded in one of a plurality of coding formats and exhibiting one of a plurality of modulation formats, said multiple types of transmission channels including at least two channels from among satellite, cable and terrestrial channels, signal processing apparatus comprising:	In a system for receiving a modulated signal from multiple types of transmission channels, said signal being representative of compressed digital data coded in one of a plurality of coding formats and exhibiting one of a plurality of modulation formats, said multiple types of transmission channels including at least two channels from among satellite, cable and terrestrial channels, signal processing apparatus comprising: (claim 87)
a demodulator for selectively demodulating said modulated signal from among modulation formats including PAM and including QAM to produce a demodulated signal; and	a demodulator for selectively demodulating said modulated signal from among modulation formats including PAM and including QAM to produce a demodulated signal; and (claim 87)
a decoder for selectively decoding said demodulated signal from among coding formats including trellis coded formats to produce a demodulated and decoded signal.	a decoder for selectively decoding said demodulated signal from among coding formats including punctured coded and trellis coded formats to produce a demodulated and decoded signal.

Attachment O

Proposed Count 8	Claim 10 of the `471 Patent
In a system for receiving a modulated signal from multiple types of transmission channels, said signal being representative of compressed digital data coded in one of a plurality of coding formats and exhibiting one of a plurality of modulation formats, a method comprising the steps of:	In a system for receiving a modulated signal from multiple types of transmission channels, said signal being representative of compressed digital data coded in one of a plurality of coding formats and exhibiting one of a plurality of modulation formats, a method comprising the steps of:
selecting a modulation format for demodulation from among said plurality of modulation formats;	selecting a modulation format for demodulation from among said plurality of modulation formats;
demodulating said modulated signal according to said selected modulation format to produce a demodulated signal;	demodulating said modulated signal according to said selected modulation format to produce a demodulated signal;
selecting a coding format for decoding from among coding formats including trellis coded formats; and	selecting a coding format for decoding from among coding formats including punctured coded and trellis coded formats; and
decoding said demodulated signal according to said selected coding format to produce a demodulated and decoded signal.	decoding said demodulated signal according to said selected coding format to produce a demodulated and decoded signal.

Attachment P

Proposed Count 8	Claim 93 of the Patel *et al.* Application
In a system for receiving a modulated signal from multiple types of transmission channels, said signal being representative of compressed digital data coded in one of a plurality of coding formats and exhibiting one of a plurality of modulation formats, a method comprising the steps of:	In a system for receiving a modulated signal from multiple types of transmission channels, said signal being representative of compressed digital data coded in one of a plurality of coding formats and exhibiting one of a plurality of modulation formats, a method comprising the steps of:
selecting a modulation format for demodulation from among said plurality of modulation formats;	selecting a modulation format for demodulation from among said plurality of modulation formats;
demodulating said modulated signal according to said selected modulation format to produce a demodulated signal;	demodulating said modulated signal according to said selected modulation format to produce a demodulated signal;
selecting a coding format for decoding from among coding formats including trellis coded formats; and	selecting a coding format for decoding from among coding formats including punctured coded and trellis coded formats; and
decoding said demodulated signal according to said selected coding format to produce a demodulated and decoded signal.	decoding said demodulated signal according to said selected coding format to produce a demodulated and decoded signal.

Attachment Q

Claim 2	The Patel *et al.* Disclosure
In a system for receiving and adaptively processing a video signal encoded in one of a plurality of different formats suitable for satellite, terrestrial or cable transmission modes, apparatus comprising:	The Patel *et al.* system receives and adaptively processes a carrier modulated by one of diverse modulation formats and one of diverse coding formats. As to types of transmission channels, terrestrial and cable transmission are expressly disclosed (page 1, lines 13, 15) and satellite transmission is implicitly disclosed by reference to "narrowcasting" (page 1, line 14).
an adaptive decoder for providing a decoded output from an input signal encoded in different signal formats for different transmission modes;	Selection between coding formats for decoding is made by the DATA SOURCE SELECTOR 39 (Fig. 2) in response to the detection signal produced by the VSB PILOT CARRIER PRESENCE DETECTOR 34 (Fig. 1). Note text at page 15, lines 1-13. Decoding is performed by either the QAM 2-D TRELLIS DECODER 37 or the VSB 1-D TRELLIS DECODER 38, depending upon the signal path selected by the DATA SOURCE SELECTOR 39. See Fig. 2.
an adaptive deinterleaver for deinterleaving said decoded output in accordance with a deinterleaving function selected from a plurality of deinterleaving functions wherein said adaptive deinterleaver is configured with said selected deinterleaving function; and	A DATA DEINTERLEAVER 40 (Fig. 2) is disclosed, which adapts based on control signal from DETECTOR 34 (Fig. 1).
an output signal processor for processing deinterleaved output data.	PACKET SORTER 43 and sound and video circuits 47, 48, 51, 54 ultimately process the output data.

Claim 3	The Patel *et al.* Disclosure
In a system for receiving and adaptively processing a video signal encoded in one of a plurality of different signal formats suitable for satellite, terrestrial or cable transmission modes, apparatus comprising:	The Patel *et al.* system receives and adaptively processes a carrier modulated by one of diverse modulation formats and one of diverse coding formats. As to types of transmission channels, terrestrial and cable transmission are expressly disclosed (page 1, lines 13, 15) and satellite transmission is implicitly disclosed by reference to "narrowcasting" (page 1, line 14).
an adaptive decoder for providing a decoded output from an input signal encoded at different times in accordance with different ones of said	Selection between coding formats for decoding is made by the DATA SOURCE SELECTOR 39 (Fig. 2) in response to the detection signal

plurality of different signal formats;	produced by the VSB PILOT CARRIER PRESENCE DETECTOR 34 (Fig. 1). Note text at page 15, lines 1-13. Decoding is performed by either the QAM 2-D TRELLIS DECODER 37 or the VSB 1-D TRELLIS DECODER 38, depending upon the signal path selected by the DATA SOURCE SELECTOR 39. See Fig. 2.
an adaptive deinterleaver for deinterleaving said decoded output in accordance with a deinterleaving function selected from a plurality of deinterleaving functions, wherein said adaptive deinterleaver is configured with said selected deinterleaving function; and	A DATA DEINTERLEAVER 40 (Fig. 2) is disclosed, which adapts based on control signal from DETECTOR 34 (Fig. 1).
an output signal processor for processing deinterleaved output data.	PACKET SORTER 43 and sound and video circuits 47, 48, 51, 54 ultimately process the output data.

Claim 4	**The Patel *et al.* Disclosure**
Apparatus according to one of claims 2 and 3, wherein said adaptive decoder is configured with a selected decoding function to decode said input signal.	The adaptive decoder of Patel *et al.* is configured according to QAM or VSB coding functions, selected based on the choice of the SELECTOR 39.

Claim 5	**The Patel *et al.* Disclosure**
Apparatus according to one of claims 2 and 3, wherein said adaptive decoder is an adaptive trellis decoder configured with a selected decoding function to decode said input signal.	The QAM 2-D TRELLIS DECODER 37 and the VSB 1-D TRELLIS DECODER 38 are both trellis decoders and a choice is adaptively made between their outputs.

Claim 6	**The Patel *et al.* Disclosure**
Apparatus according to one of claims 2 and 3, wherein said output processor includes a means for reordering said deinterleaved output data.	The DATA DERANDOMIZER 42 (Fig. 2) performs the function of reordering data which has already been deinterleaved.

Claim 7	**The Patel *et al.* Disclosure**
Apparatus according to one of claims 2 and 3, wherein said output processor includes a descrambler for descrambling said output data.	The DATA DERANDOMIZER 42 (Fig. 2) performs the function of descrambling data which is output from the REED-SOLOMON DECODER 41.

Claim 8	The Patel *et al.* Disclosure
Apparatus according to one of claims 2 or 3, wherein said output signal processor includes an adaptive derandomizer to reorder said deinterleaved output data where necessary for restoring it to an original format thereof before any randomization performed for transmission purposes.	The DATA DERANDOMIZER 42 (Fig. 2) performs the function of descrambling data which is output from the REED-SOLOMON DECODER 41. The DATA DERANDOMIZER adapts its operation in response to the control signal received from the DETECTOR 34 (Fig. 1).

Claim 9	The Patel *et al.* Disclosure
Apparatus according to one of claims 2 and 3, further including a demodulator for demodulating a modulated video input signal to provide said input signal encoded in different signal formats.	Selection between modulation formats is made by the SYNCHRODYNE RESULT SELECTOR 33 in response to the detection signal produced by the VSB PILOT CARRIER PRESENCE DETECTOR 34. See Fig. 1. Note text at page 13, lines 13-25. Demodulation is performed by either the SYNCHRODYNE QAM TO BASEBAND 25 or the SYNCHRODYNE VSB TO BASEBAND 29, depending upon the signal path selected by the SYNCHRODYNE RESULT SELECTOR 33. See Fig. 1.

Claim 10	The Patel *et al.* Disclosure
Apparatus according to one of claims 2 and 3, further including a demodulator for demodulating a modulated video input signal to provide each said input signal encoded in accordance with one of said plurality of different signal formats.	Selection between modulation formats is made by the SYNCHRODYNE RESULT SELECTOR 33 in response to the detection signal produced by the VSB PILOT CARRIER PRESENCE DETECTOR 34. See Fig. 1. Note text at page 13, lines 13-25. Demodulation is performed by either the SYNCHRODYNE QAM TO BASEBAND 25 or the SYNCHRODYNE VSB TO BASEBAND 29, depending upon the signal path selected by the SYNCHRODYNE RESULT SELECTOR 33. See Fig. 1.

Claim 11	The Patel *et al.* Disclosure
Apparatus according to one of claims 2 and 3, further including a differential decoder for providing a differentially decoded output as said decoded output when said encoded video signal exhibits a predetermined format.	The QAM 2-D TRELLIS DECODER 37 decodes a QAM signal. Differential decoding is commonly used to decode QAM signals. See, '170 patent, column 5, lines 23-30.

Claim 12	The Patel *et al.* Disclosure
Apparatus according to claim 9, wherein said demodulator demodulates an input signal having a carrier with plural-phase amplitude.	Demodulation of an input signal having a plural phase-amplitude type of constellation is performed by the SYNCHRODYNE QAM TO BASEBAND circuitry 25.

Claim 13	The Patel *et al.* Disclosure
Apparatus according to claim 10, wherein said demodulator demodulates an input signal having a carrier with plural-phase amplitude.	Demodulation of an input signal having a plural phase-amplitude type of constellation is performed by the SYNCHRODYNE QAM TO BASEBAND circuitry 25.

Claim 14	The Patel *et al.* Disclosure
Apparatus according to claim 9, wherein said demodulator demodulates a QAM modulated video input signal.	Demodulation of an input signal having a QAM format is performed by the SYNCHRODYNE QAM TO BASEBAND circuitry 25.

Claim 15	The Patel *et al.* Disclosure
Apparatus according to claim 10, wherein said demodulator demodulates a QAM modulated video input signal.	Demodulation of an input signal having a QAM format is performed by the SYNCHRODYNE QAM TO BASEBAND circuitry 25.

Claim 16	The Patel *et al.* Disclosure
Apparatus according to one of claims 2 and 3, further including a means for processing the data for being interleaved as a function of said different signal formats and different symbol constellations of said input signal.	The DEINTERLEAVER 40 operates to deinterleave signals for both QAM and VSB formats. QAM and VSB inputs signals have different symbol constellations.

Claim 17	The Patel *et al.* Disclosure
Apparatus according to one of claims 2 and 3, wherein said adaptive decoder has circuitry connected therewith for selectively mapping data for being deinterleaved as a function of said different signal formats and different symbol constellations of said input signal.	The DEINTERLEAVER 40 operates to deinterleave signals for both QAM and VSB formats. QAM and VSB inputs signals have different symbol constellations.

Claim 18	The Patel *et al.* Disclosure
Apparatus according to one of claims 2 and 3, further including a means for processing the data as a function of said different signal formats and	The DEINTERLEAVER 40 operates to deinterleave signals for both QAM and VSB formats. QAM and VSB inputs signals have

different symbol constellations of said input signal to be deinterleaved.	different symbol constellations.

Claim 19	The Patel *et al.* Disclosure
Apparatus according to claim 16, wherein one of said different signal formats is a vestigial-sideband amplitude-modulated input signal with a one-dimensional symbol constellation, and wherein another of said different signal formats is a quadrature-amplitude-modulated (QAM) input signal with a two-dimensional symbol constellation.	One of the modulation formats taught by Patel *et al.* is VSB amplitude modulation, which has a one-dimensional (i.e., 1-D) constellation and has eight symbol points. See page 1, lines 12-15; page 14, line 26 through page 15, line 1. The other one of the modulation formats taught by Patel *et al.* is QAM modulation, which has a two-dimensional (i.e., 2-D) constellation and may have sixteen or thirty-two symbol points. See page 14, lines 24-26; page 17, lines 13-17.

Claim 20	The Patel *et al.* Disclosure
Apparatus according to claim 17, wherein one of said different signal formats is a vestigial-sideband amplitude-modulated input signal with a one-dimensional symbol constellation, and wherein another of said different signal formats is a quadrature-amplitude-modulated (QAM) input signal with a two-dimensional symbol constellation.	One of the modulation formats taught by Patel *et al.* is VSB amplitude modulation, which has a one-dimensional (i.e., 1-D) constellation and has eight symbol points. See page 1, lines 12-15; page 14, line 26 through page 15, line 1. The other one of the modulation formats taught by Patel *et al.* is QAM modulation, which has a two-dimensional (i.e., 2-D) constellation and may have sixteen or thirty-two symbol points. See page 14, lines 24-26; page 17, lines 13-17.

Claim 21	The Patel *et al.* Disclosure
Apparatus according to claim 18, wherein one of said different signal formats is a vestigial-sideband amplitude-modulated input signal with a one-dimensional symbol constellation, and wherein another of said different signal formats is a quadrature-amplitude-modulated (QAM) input signal with a two-dimensional symbol constellation.	One of the modulation formats taught by Patel *et al.* is VSB amplitude modulation, which has a one-dimensional (i.e., 1-D) constellation and has eight symbol points. See page 1, lines 12-15; page 14, line 26 through page 15, line 1. The other one of the modulation formats taught by Patel *et al.* is QAM modulation, which has a two-dimensional (i.e., 2-D) constellation and may have sixteen or thirty-two symbol points. See page 14, lines 24-26; page 17, lines 13-17.

Claim 22	The Patel *et al.* Disclosure
Apparatus according to one of claims 2 and 3, wherein said adaptive decoder and adaptive deinterleaver are automatically configured to be	Automatic configuration of various portions of the carrier recovery network of Patel *et al.* is accomplished based on the detection (or lack

compatible with the format of said encoded video signal.	thereof) of a VSB pilot carrier by the DETECTOR 34, which generates a control signal indicative of the modulation format being received.

Claim 23	The Patel *et al.* Disclosure
Apparatus according to one of claims 2 and 3, wherein said adaptive decoder and adaptive deinterleaver are automatically configured to be compatible with the format of said input signal in response to a control signal generated by detection apparatus for determining the format of said input signal.	Automatic configuration of various portions of the carrier recovery network of Patel *et al.* is accomplished based on the detection (or lack thereof) of a VSB pilot carrier by the DETECTOR 34, which generates a control signal indicative of the modulation format being received.

Claim 24	The Patel *et al.* Disclosure
Apparatus according to one of claims 2 and 3, further including an adaptive error processor for correcting errors in said deinterleaved output data, said error processor adapting between different signal formats by changing at least one of: (a) error function type, (b) error correction code length, and (c) data packet length.	The REED-SOLOMON DECODER 41 (Fig. 2) corrects errors inherently as a part of its natural operation. The adaptability of the REED-SOLOMON DECODER 41 is done in response to the control signal from the DETECTOR 34, and inherently includes changing at least one of: (a) error function type, (b) error correction code length, and (c) data packet length.

Claim 25	The Patel *et al.* Disclosure
Apparatus according to claim 23, further including an adaptive error processor for correcting errors in said deinterleaved output data, said error processor responding to said control signal to adapt between different ones of said plurality of signal formats by changing at least one of: (a) error function type, (b) error correction code length, and (c) data packet length.	The REED-SOLOMON DECODER 41 (Fig. 2) corrects errors inherently as a part of its natural operation. The adaptability of the REED-SOLOMON DECODER 41 is done in response to the control signal from the DETECTOR 34 and inherently includes changing at least one of: (a) error function type, (b) error correction code length, and (c) data packet length.

Claim 26	The Patel *et al.* Disclosure
Apparatus according to claim 24, wherein said adaptive error processor adapts between different signal formats by adapting to parity data in said deinterleaved output data.	The standard operation of a REED-SOLOMON DECODER 41 is based in part on parity concepts.

Claim 27	The Patel *et al.* Disclosure
Apparatus according to one of claims 2 and 3, further including: an adaptive error processor for correcting errors in said deinterleaved output data, said error processor adapting between ones of said plurality of different signal formats by changing at least one of: (a) error function type, (b) error correction code length, and (c) data packet length.	The REED-SOLOMON DECODER 41 (Fig. 2) corrects errors inherently as a part of its natural operation. The adaptability of the REED-SOLOMON DECODER 41 is done in response to the control signal from the DETECTOR 34 and inherently includes changing at least one of: (a) error function type, (b) error correction code length, and (c) data packet length.

Claim 28	The Patel *et al.* Disclosure
Apparatus according to claim 24, wherein said adaptive error processor is a Reed-Solomon decoder.	REED-SOLOMON DECODER 41 (Fig. 2).

Claim 29	The Patel *et al.* Disclosure
Apparatus according to claim 25, wherein said adaptive error processor is a Reed-Solomon decoder.	REED-SOLOMON DECODER 41 (Fig. 2).

Claim 30	The Patel *et al.* Disclosure
Apparatus according to claim 26, wherein said adaptive error processor is a Reed-Solomon decoder.	REED-SOLOMON DECODER 41 (Fig. 2).

Claim 31	The Patel *et al.* Disclosure
Apparatus according to claim 27, wherein said adaptive error processor is a Reed-Solomon decoder.	REED-SOLOMON DECODER 41 (Fig. 2).

Claim 32	The Patel *et al.* Disclosure
In a system for receiving and adaptively processing a video signal encoded in one of a plurality of different formats suitable for satellite, terrestrial or cable transmission modes, apparatus comprising:	The Patel *et al.* system receives and adaptively processes a carrier modulated by one of diverse modulation formats and one of diverse coding formats. As to types of transmission channels, terrestrial and cable transmission are expressly disclosed (page 1, lines 13, 15) and satellite transmission is implicitly disclosed by reference to "narrowcasting" (page 1, line 14).
an adaptive decoder for providing a decoded output from an input signal encoded in different	Selection between coding formats for decoding is made by the DATA SOURCE SELECTOR

signal formats for different transmission modes;	39 (Fig. 2) in response to the detection signal produced by the VSB PILOT CARRIER PRESENCE DETECTOR 34 (Fig. 1). Note text at page 15, lines 1-13. Decoding is performed by either the QAM 2-D TRELLIS DECODER 37 or the VSB 1-D TRELLIS DECODER 38, depending upon the signal path selected by the DATA SOURCE SELECTOR 39. See Fig. 2.
an adaptive error decoder for detecting and correcting errors in said decoded output, said error decoder adapting between different signal formats by changing at least one of: (a) error function type, (b) error correction code length, and (c) data packet length; and	The REED-SOLOMON DECODER 41 (Fig. 2) corrects errors inherently as a part of its natural operation. The adaptability of the REED-SOLOMON DECODER 41 is done in response to the control signal from the DETECTOR 34.
an output signal processor for processing said error corrected data.	PACKET SORTER 43 and sound and video circuits 47, 48, 51, 54 ultimately process the output data.

Claim 33	The Patel *et al.* Disclosure
In a system for receiving and adaptively processing a video signal encoded in one of a plurality of different formats suitable for satellite, terrestrial or cable transmission modes, apparatus comprising:	The Patel *et al.* system receives and adaptively processes a carrier modulated by one of diverse modulation formats and one of diverse coding formats. As to types of transmission channels, terrestrial and cable transmission are expressly disclosed (page 1, lines 13, 15) and satellite transmission is implicitly disclosed by reference to "narrowcasting" (page 1, line 14).
an adaptive decoder for providing a decoded output from an input signal encoded at different times in accordance with different ones of said plurality of different signal formats;	Selection between coding formats for decoding is made by the DATA SOURCE SELECTOR 39 (Fig. 2) in response to the detection signal produced by the VSB PILOT CARRIER PRESENCE DETECTOR 34 (Fig. 1). Note text at page 15, lines 1-13. Decoding is performed by either the QAM 2-D TRELLIS DECODER 37 or the VSB 1-D TRELLIS DECODER 38, depending upon the signal path selected by the DATA SOURCE SELECTOR 39. See Fig. 2.
an adaptive error decoder for detecting and correcting errors in said decoded output, said error decoder adapting between ones of said plurality of different signal formats by changing at least one of: (a) error function type, (b) error correction code length, and (c) data packet length; and	The REED-SOLOMON DECODER 41 (Fig. 2) corrects errors inherently as a part of its natural operation. The adaptability of the REED-SOLOMON DECODER 41 is done in response to the control signal from the DETECTOR 34 and inherently includes changing at least one of: (a) error function type, (b) error correction code

	length, and (c) data packet length.
an output signal processor for processing said error corrected data.	PACKET SORTER 43 and sound and video circuits 47, 48, 51, 54 ultimately process the output data.

Claim 34	The Patel *et al.* Disclosure
Apparatus according to one of claims 32 and 33, further including a differential decoder for providing a differentially decoded output as said decoded output when said encoded video signal exhibits a predetermined format.	The QAM 2-D TRELLIS DECODER 37 decodes a QAM signal. Differential decoding is commonly used to decode QAM signals. See, '170 patent, column 5, lines 23-30.

Claim 35	The Patel *et al.* Disclosure
Apparatus according to one of claims 32 and 33, wherein said adaptive error decoder is a Reed-Solomon decoder.	REED-SOLOMON DECODER 41 (Fig. 2).

Claim 36	The Patel *et al.* Disclosure
In a system for receiving and adaptively processing a video signal encoded in one of a plurality of different formats suitable for satellite, terrestrial or cable transmission, apparatus comprising:	The Patel *et al.* system receives and adaptively processes a carrier modulated by one of diverse modulation formats and one of diverse coding formats. As to types of transmission channels, terrestrial and cable transmission are expressly disclosed (page 1, lines 13, 15) and satellite transmission is implicitly disclosed by reference to "narrowcasting" (page 1, line 14).
an adaptive deinterleaver for deinterleaving said encoded video signal encoded in one of a plurality of deinterleaving functions; and	A DATA DEINTERLEAVER 40 (Fig. 2) is disclosed, which adapts based on control signal from DETECTOR 34 (Fig. 1).
an adaptive error decoder for detecting and correcting errors in said deinterleaved output, said error decoder adapting between different signal formats by changing at least one of: (a) error function type, (b) error correction code length, and (c) data packet length; and	The REED-SOLOMON DECODER 41 (Fig. 2) corrects errors inherently as a part of its natural operation. The REED-SOLOMON DECODER 41 adapts in response to the control signal from the DETECTOR 34.
an output signal processor for processing said error corrected data.	PACKET SORTER 43 and sound and video circuits 47, 48, 51, 54 ultimately process the output data.

Claim 37	The Patel *et al.* Disclosure
In a system for receiving and adaptively processing a video signal encoded in one of a	The Patel *et al.* system receives and adaptively processes a carrier modulated by one of diverse

plurality of different signal formats suitable for satellite, terrestrial or cable transmission, apparatus comprising:	modulation formats and one of diverse coding formats. As to types of transmission channels, terrestrial and cable transmission are expressly disclosed (page 1, lines 13, 15) and satellite transmission is implicitly disclosed by reference to "narrowcasting" (page 1, line 14).
an adaptive deinterleaver for deinterleaving said decoded video signal in accordance with a deinterleaving function selected from a plurality of deinterleaving functions; and	A DATA DEINTERLEAVER 40 (Fig. 2) is disclosed, which adapts based on control signal from DETECTOR 34 (Fig. 1).
an adaptive error decoder for detecting and correcting errors in said deinterleaved output, said error decoder adapting between ones of said plurality of different signal formats by changing at least one of: (a) error function type. (b) error correction code length, and (c) data packet length; and	The REED-SOLOMON DECODER 41 (Fig. 2) corrects errors inherently as a part of its natural operation. The REED-SOLOMON DECODER 41 adapts in response to the control signal from the DETECTOR 34 and inherently includes changing at least one of: (a) error function type, (b) error correction code length, and (c) data packet length.
an output signal processor for processing said error corrected data.	PACKET SORTER 43 and sound and video circuits 47, 48, 51, 54 ultimately process the output data.

Claim 38	The Patel *et al.* Disclosure
Apparatus according to one of claims 36 and 37, wherein said adaptive error decoder function is a Reed-Solomon function.	REED-SOLOMON DECODER 41 (Fig. 2).

Claim 39	The Patel *et al.* Disclosure
Apparatus according to one of claims 36 and 37, wherein said adaptive error decoder is a Reed-Solomon decoder.	REED-SOLOMON DECODER 41 (Fig. 2).

Claim 40	The Patel *et al.* Disclosure
Apparatus according to one of claims 36 and 37, wherein said adaptive deinterleaver is configured with said selected deinterleaving function.	Selection of the deinterleaving function is made based on the control signal received from the DETECTOR 34 (Fig. 1).

Claim 41	The Patel *et al.* Disclosure
A method for adaptively processing a video signal encoded in one of a plurality of different formats suitable for satellite, terrestrial or cable	The Patel *et al.* system receives and adaptively processes a carrier modulated by one of diverse modulation formats and one of diverse coding

transmission modes, comprising the steps of:	formats. As to types of transmission channels, terrestrial and cable transmission are expressly disclosed (page 1, lines 13, 15) and satellite transmission is implicitly disclosed by reference to "narrowcasting" (page 1, line 14).
adaptively decoding an input signal to provide a decoded output, said input signal being encoded in different signal formats for different transmission modes;	Selection between coding formats for decoding is made by the DATA SOURCE SELECTOR 39 (Fig. 2) in response to the detection signal produced by the VSB PILOT CARRIER PRESENCE DETECTOR 34 (Fig. 1). Note text at page 15, lines 1-13. Decoding is performed by either the QAM 2-D TRELLIS DECODER 37 or the VSB 1-D TRELLIS DECODER 38, depending upon the signal path selected by the DATA SOURCE SELECTOR 39. See Fig. 2.
selecting a deinterleaving function from a plurality of deinterleaving functions;	The DETECTOR 34 generates a control signal which is input to the DATA DEINTERLEAVER 40 (Fig. 2) to select a deinterleaving configuration.
configuring an adaptive deinterleaver with said selected deinterleaving function;	Deinterleaving in the DEINTERLEAVER 40 is done in accordance with the selection made by the control signal from the DETECTOR 34.
adaptively deinterleaving said decoded output using said selected deinterleaving function; and	The DATA DEINTERLEAVER 40 (Fig. 2) operates according to the configuration selected by the control signal from the DETECTOR 34 (Fig. 1).
processing said deinterleaved data.	Sound and video circuits 47, 48, 51, 54 ultimately process the output data.

Claim 42	**The Patel *et al.* Disclosure**
A method for adaptively processing a video signal encoded in one of a plurality of different formats suitable for satellite, terrestrial or cable transmission modes, comprising the steps of:	The Patel *et al.* system receives and adaptively processes a carrier modulated by one of diverse modulation formats and one of diverse coding formats. As to types of transmission channels, terrestrial and cable transmission are expressly disclosed (page 1, lines 13, 15) and satellite transmission is implicitly disclosed by reference to "narrowcasting" (page 1, line 14).
adaptively decoding an input signal, as encoded at different times in accordance with different ones of said plurality of different signal formats, to provide a decoded output signal;	Selection between coding formats for decoding is made by the DATA SOURCE SELECTOR 39 (Fig. 2) in response to the detection signal produced by the VSB PILOT CARRIER PRESENCE DETECTOR 34 (Fig. 1). Note text

	at page 15, lines 1-13. Decoding is performed by either the QAM 2-D TRELLIS DECODER 37 or the VSB 1-D TRELLIS DECODER 38, depending upon the signal path selected by the DATA SOURCE SELECTOR 39. See Fig. 2.
selecting a deinterleaving function from a plurality of deinterleaving functions;	The DETECTOR 34 generates a control signal which is input to the DATA DEINTERLEAVER 40 (Fig. 2) to select a deinterleaving configuration.
configuring an adaptive deinterleaver with said selected deinterleaving function;	Deinterleaving in the DEINTERLEAVER 40 is done in accordance with the selection made by the control signal from the DETECTOR 34.
adaptively deinterleaving said decoded output signal using said adaptive deinterleaver configured with said selected deinterleaving function; and	The DATA DEINTERLEAVER 40 (Fig. 2) operates according to the configuration selected by the control signal from the DETECTOR 34 (Fig. 1).
processing said deinterleaved data.	Sound and video circuits 47, 48, 51, 54 ultimately process the output data.

Claim 43	**The Patel *et al.* Disclosure**
A method of adaptively processing a video signal encoded in one of a plurality of different formats suitable for satellite, terrestrial or cable transmission, comprising the steps of:	The Patel *et al.* system receives and adaptively processes a carrier modulated by one of diverse modulation formats and one of diverse coding formats. As to types of transmission channels, terrestrial and cable transmission are expressly disclosed (page 1, lines 13, 15) and satellite transmission is implicitly disclosed by reference to "narrowcasting" (page 1, line 14).
adaptively decoding an input signal encoded in different signal formats for different transmission modes to provide a decoded output;	Selection between coding formats for decoding is made by the DATA SOURCE SELECTOR 39 (Fig. 2) in response to the detection signal produced by the VSB PILOT CARRIER PRESENCE DETECTOR 34 (Fig. 1). Note text at page 15, lines 1-13. Decoding is performed by either the QAM 2-D TRELLIS DECODER 37 or the VSB 1-D TRELLIS DECODER 38, depending upon the signal path selected by the DATA SOURCE SELECTOR 39. See Fig. 2.
adaptively detecting errors in said decoded output;	The REED-SOLOMON DECODER 41 (Fig. 2) detects errors inherently as a part of its natural operation. The REED-SOLOMON DECODER 41 adapts in response to the control signal from the DETECTOR 34.

adaptively correcting said detected errors in said decoded output by changing at least one of: (a) error function type, (b) error correction code length, and (c) data packet length; and	The REED-SOLOMON DECODER 41 (Fig. 2) corrects errors inherently as a part of its natural operation. The REED-SOLOMON DECODER 41 adapts in response to the control signal from the DETECTOR 34 and inherently includes changing at least one of: (a) error function type, (b) error correction code length, and (c) data packet length.
processing said error corrected data.	Sound and video circuits 47, 48, 51, 54 ultimately process the output data.

Claim 44	**The Patel *et al.* Disclosure**
A method of adaptively processing a video signal encoded in one of a plurality of different formats suitable for satellite, terrestrial or cable transmission, comprising the steps of:	The Patel *et al.* system receives and adaptively processes a carrier modulated by one of diverse modulation formats and one of diverse coding formats. As to types of transmission channels, terrestrial and cable transmission are expressly disclosed (page 1, lines 13, 15) and satellite transmission is implicitly disclosed by reference to "narrowcasting" (page 1, line 14).
adaptively decoding an input signal, as encoded at different times in accordance with different ones of said plurality of different signal formats, to provide a decoded output signal;	Selection between coding formats for decoding is made by the DATA SOURCE SELECTOR 39 (Fig. 2) in response to the detection signal produced by the VSB PILOT CARRIER PRESENCE DETECTOR 34 (Fig. 1). Note text at page 15, lines 1-13. Decoding is performed by either the QAM 2-D TRELLIS DECODER 37 or the VSB 1-D TRELLIS DECODER 38, depending upon the signal path selected by the DATA SOURCE SELECTOR 39. See Fig. 2.
adaptively detecting errors in said decoded output signal;	The REED-SOLOMON DECODER 41 (Fig. 2) detects errors inherently as a part of its natural operation. The REED-SOLOMON DECODER 41 adapts in response to the control signal from the DETECTOR 34.

adaptively correcting said detected errors in said decoded output signal by changing at least one of: (a) error function type, (b) error correction code length, and (c) data packet length; and	The REED-SOLOMON DECODER 41 (Fig. 2) corrects errors inherently as a part of its natural operation. The adaptability of the REED-SOLOMON DECODER 41 is done in response to the control signal from the DETECTOR 34 and inherently includes changing at least one of: (a) error function type, (b) error correction code length, and (c) data packet length.
processing said error corrected data.	Sound and video circuits 47, 48, 51, 54 ultimately process the output data.

Claim 45	The Patel *et al.* Disclosure
A method of adaptively processing a video signal encoded in one of a plurality of different formats suitable for satellite, terrestrial or cable transmission, comprising the steps of:	The Patel *et al.* system receives and adaptively processes a carrier modulated by one of diverse modulation formats and one of diverse coding formats. As to types of transmission channels, terrestrial and cable transmission are expressly disclosed (page 1, lines 13, 15) and satellite transmission is implicitly disclosed by reference to "narrowcasting" (page 1, line 14).
adaptively decoding an input signal encoded in different signal formats for different transmission modes, to produce a decoded output;	Selection between coding formats for decoding is made by the DATA SOURCE SELECTOR 39 (Fig. 2) in response to the detection signal produced by the VSB PILOT CARRIER PRESENCE DETECTOR 34 (Fig. 1). Note text at page 15, lines 1-13. Decoding is performed by either the QAM 2-D TRELLIS DECODER 37 or the VSB 1-D TRELLIS DECODER 38, depending upon the signal path selected by the DATA SOURCE SELECTOR 39. See Fig. 2.
selecting a deinterleaving function from a plurality of deinterleaving functions;	The DETECTOR 34 generates a control signal which is input to the DATA DEINTERLEAVER 40 (Fig. 2) to select a deinterleaving configuration.
adaptively deinterleaving said decoded output using said selected deinterleaving function;	The DATA DEINTERLEAVER 40 (Fig. 2) operates according to the configuration selected by the control signal from the DETECTOR 34 (Fig. 1).
detecting errors in deinterleaved output of different signal formats;	The REED-SOLOMON DECODER 41 (Fig. 2) detects errors inherently as a part of its natural operation. The adaptability of the REED-SOLOMON DECODER 41 is done in response to the control signal from the DETECTOR 34.

adaptively correcting an error in deinterleaved output of different signal formats by changing at least one of: (a) error function type, (b) error correction code length, and (c) data packet length; and	The REED-SOLOMON DECODER 41 (Fig. 2) corrects errors inherently as a part of its natural operation. The REED-SOLOMON DECODER 41 adapts in response to the control signal from the DETECTOR 34 and inherently includes changing at least one of: (a) error function type, (b) error correction code length, and (c) data packet length.
processing said error corrected data.	Sound and video circuits 47, 48, 51, 54 ultimately process the output data.

Claim 46	**The Patel *et al.* Disclosure**
A method for adaptively processing a video signal encoded in one of a plurality of different formats suitable for satellite, terrestrial or cable transmission, comprising the steps of:	The Patel *et al.* system receives and adaptively processes a carrier modulated by one of diverse modulation formats and one of diverse coding formats. As to types of transmission channels, terrestrial and cable transmission are expressly disclosed (page 1, lines 13, 15) and satellite transmission is implicitly disclosed by reference to "narrowcasting" (page 1, line 14).
adaptively decoding an input signal, as encoded at different times in accordance with different ones of said plurality of different signal formats, to provide a decoded output signal;	Selection between coding formats for decoding is made by the DATA SOURCE SELECTOR 39 (Fig. 2) in response to the detection signal produced by the VSB PILOT CARRIER PRESENCE DETECTOR 34 (Fig. 1). Note text at page 15, lines 1-13. Decoding is performed by either the QAM 2-D TRELLIS DECODER 37 or the VSB 1-D TRELLIS DECODER 38, depending upon the signal path selected by the DATA SOURCE SELECTOR 39. See Fig. 2.
selecting a deinterleaving function from a plurality of deinterleaving functions;	The DETECTOR 34 generates a control signal which is input to the DATA DEINTERLEAVER 40 (Fig. 2) to select a deinterleaving configuration.
adaptively deinterleaving said decoded output signal using said selected deinterleaving function;	The DATA DEINTERLEAVER 40 (Fig. 2) operates according to the configuration selected by the control signal from the DETECTOR 34 (Fig. 1).
detecting errors in deinterleaved output signal of different signal formats;	The REED-SOLOMON DECODER 41 (Fig. 2) detects errors inherently as a part of its natural operation. The REED-SOLOMON DECODER 41 adapts in response to the control signal from the DETECTOR 34.

adaptively correcting an error in deinterleaved output signal of different signal formats by changing at least one of: (a) error function type. (b) error correction code length. and (c) data packet length; and	The REED-SOLOMON DECODER 41 (Fig. 2) corrects errors inherently as a part of its natural operation. The REED-SOLOMON DECODER 41 adapts in response to the control signal from the DETECTOR 34 and inherently includes changing at least one of: (a) error function type, (b) error correction code length, and (c) data packet length.
processing said error corrected data.	Sound and video circuits 47, 48, 51, 54 ultimately process the output data.

Claim 47	**The Patel *et al.* Disclosure**
A method according to one of claims 45 and 46, further including the step of configuring an adaptive deinterleaver with said selected deinterleaving function.	A DATA DEINTERLEAVER 40 (Fig. 2) is disclosed, which adapts based on control signal from DETECTOR 34 (Fig. 1).

Claim 48	**The Patel *et al.* Disclosure**
In a system for receiving and adaptively processing a carrier modulated with video information in one of a plurality of different modulation formats suitable for satellite, terrestrial or cable transmission, an adaptive demodulator network comprising:	The Patel *et al.* system receives and adaptively processes a carrier modulated by one of diverse modulation formats and one of diverse coding formats. As to types of transmission channels, terrestrial and cable transmission are expressly disclosed (page 1, lines 13, 15) and satellite transmission is implicitly disclosed by reference to "narrowcasting" (page 1, line 14).
a timing recovery network for recovering timing data from said modulated carrier;	The SAMPLE CLOCK GENERATOR 23, the QAM IN-PHASE SYNCHRONOUS DETECTOR 250, and the VSB IN-PHASE SYNCHRONOUS DETECTOR 290 cooperate to recover symbol timing and generate clock signals therefrom. See Fig. 3 and text at page 23, line 23 through page 24, line 3.
an adaptive carrier recovery network responsive to said timing data for recovering said video information from said carrier in said different modulation formats; and	For QAM modulation format, the ADDRESS GENERATOR 28 receives timing data-derived 1st Clock Signal to drive the QAM COMPLEX CARRIER ROM 27 and the SYNCHRODYNE QAM TO BASEBAND circuitry 25. For VSB modulation format, the ADDRESS GENERATOR 32 receives timing data-derived 1st Clock Signal to drive the VSB COMPLEX CARRIER ROM 31 and the SYNCHRODYNE VSB TO BASEBAND circuitry 29.

a selectable decision network, included in said adaptive carrier recovery network, for applying a set of decision thresholds to data provided by said carrier recovery network to recover said video information, said set of decision thresholds being selected from a plurality of sets of decision thresholds suitable for different decision formats.	The QAM 2-D TRELLIS DECODER 37 and the VSB 1-D TRELLIS DECODER 38 each contain a decision network, as selected by DATA SOURCE SELECTOR 39. Since the QAM 2-D TRELLIS DECODER 37 is a two-dimensional decoder and the VSB 1-D TRELLIS DECODER 38 is a one-dimensional decoder, and also since the VSB signal has a DC component, the decision networks in these decoders must utilize different sets of decision thresholds to recover the video information.

Claim 49	The Patel *et al.* Disclosure
In a system for receiving and adaptively processing a carrier modulated with video information in one of a plurality of different modulation formats suitable for satellite, terrestrial or cable transmission, an adaptive demodulator network comprising:	The Patel *et al.* system receives and adaptively processes a carrier modulated by one of diverse modulation formats and one of diverse coding formats. As to types of transmission channels, terrestrial and cable transmission are expressly disclosed (page 1, lines 13, 15) and satellite transmission is implicitly disclosed by reference to "narrowcasting" (page 1, line 14).
a timing recovery network for recovering timing data from said modulated carrier;	The SAMPLE CLOCK GENERATOR 23, the QAM IN-PHASE SYNCHRONOUS DETECTOR 250, and the VSB IN-PHASE SYNCHRONOUS DETECTOR 290 cooperate to recover symbol timing and generate clock signals therefrom. See Fig. 3 and text at page 23, line 23 through page 24, line 3.
an adaptive carrier recovery network responsive to said timing data for recovering said video information from said carrier in said different modulation formats; and	For QAM modulation format, the ADDRESS GENERATOR 28 receives timing data-derived 1st Clock Signal to drive the QAM COMPLEX CARRIER ROM 27 and the SYNCHRODYNE QAM TO BASEBAND circuitry 25. For VSB modulation format, the ADDRESS GENERATOR 32 receives timing data-derived 1st Clock Signal to drive the VSB COMPLEX CARRIER ROM 31 and the SYNCHRODYNE VSB TO BASEBAND circuitry 29.
a selectable decision network, included in said adaptive carrier recovery network, for applying a set of decision thresholds to data provided by said carrier recovery network to recover said video information, said set of decision thresholds being selected from a plurality of sets	The QAM 2-D TRELLIS DECODER 37 and the VSB 1-D TRELLIS DECODER 38 each contain a decision network, as selected by DATA SOURCE SELECTOR 39. Since the QAM 2-D TRELLIS DECODER 37 is a two-dimensional decoder and the VSB 1-D

of decision thresholds suitable for said different modulation formats.	TRELLIS DECODER 38 is a one-dimensional decoder, and also since the VSB signal includes a DC component, the decision networks in these decoders must utilize different sets of decision thresholds to recover the video information.

Claim 50	The Patel *et al.* Disclosure
A system according to one of claims 48 and 49, further including a selectable differential decoder for differentially decoding a signal produced by said carrier recovery network.	The QAM 2D TRELLIS DECODER 37 selectively decodes a QAM signal. Differential decoding is commonly used to decode QAM signals. See, '170 patent, column 5, lines 23-30. Selection is made between the two TRELLIS DECODERS 37, 38 by the DATA SOURCE SELECTOR 39.

Claim 51	The Patel *et al.* Disclosure
A system according to one of claims 48 and 49, further including a differential decoder for differentially decoding a signal produced by said carrier recovery network.	The QAM 2-D TRELLIS DECODER 37 decodes a QAM signal. Differential decoding is commonly used to decode QAM signals. See, '170 patent, column 5, lines 23-30.

Claim 52	The Patel *et al.* Disclosure
A system according to one of claims 48 and 49, wherein said selectable decision network applies decision thresholds for a VSB one-dimensional symbol constellation and for a QAM two-dimensional symbol constellation.	The QAM 2-D TRELLIS DECODER 37 is a two-dimensional decoder and the VSB 1-D TRELLIS DECODER 38 is a one-dimensional decoder.

Claim 53	The Patel *et al.* Disclosure
A system according to one of claims 48 and 49, wherein said selectable decision network applies decision thresholds appropriate for at least two of PAM, QPSK, VSB and QAM constellations.	The QAM 2-D TRELLIS DECODER 37 applies decision thresholds for QAM. The VSB 1-D TRELLIS DECODER 38 applies decision thresholds for VSB, which is a species of PAM.

Claim 54	The Patel *et al.* Disclosure
A system according to one of claims 48 and 49, wherein the modulation format of said video information uses a symbol constellation containing a plurality of symbol points.	As is well understood in the art, both the QAM and the VSB modulation formats use symbol constellations that contain a plurality of symbol points.

Claim 55	The Patel *et al.* Disclosure
A system according to claim 54, wherein one of said modulation formats is a vestigial-sideband amplitude-modulation format with a one-dimensional symbol constellation having eight symbol points.	One of the modulation formats taught by Patel *et al.* is VSB amplitude modulation, which has a one-dimensional (i.e., 1-D) constellation and has eight symbol points. See page 1, lines 12-15; page 14, line 26 through page 15, line 1.

Claim 56	The Patel *et al.* Disclosure
A system according to claim 54, wherein one of said modulation formats is a quadrature-amplitude-modulation format with a two-dimensional symbol constellation having at least sixteen symbol points.	One of the modulation formats taught by Patel *et al.* is QAM modulation, which has a two-dimensional (i.e., 2-D) constellation and may have sixteen or thirty-two symbol points. See page 14, lines 24-26; page 17, lines 14-17.

Claim 57	The Patel *et al.* Disclosure
A system according to one of claims 48 and 49, wherein said carrier recovery network further includes a selectable equalizer network for compensating for errors associated with a transmission channel, wherein the configuration of said equalizer filter network is selected in accordance with the modulation format of said modulated carrier.	The EQUALIZER 36 adapts based on the detection signal provided by the format DETECTOR 34.

Claim 58	The Patel *et al.* Disclosure
A system according to claim 57, wherein said selectable equalizer network includes a feed forward equalizer filter and a decision feedback equalizer.	The EQUALIZER 36 is disclosed as having a multiple tap digital filter, which would be understood by persons having ordinary skill in this art to include at least feed forward taps and possibly feed back taps. Use of feed back in the EQUALIZER 36 is expressly disclosed. See page 14, lines 14-21.

Claim 59	The Patel *et al.* Disclosure
A system according to one of claims 48 and 49, wherein said adaptive carrier recovery network is automatically configured to be compatible with the modulation format of said carrier modulated with video information.	Automatic configuration of various portions of the carrier recovery network of Patel *et al.* is accomplished based on the detection (or lack thereof) of a VSB pilot carrier by the DETECTOR 34, which generates a control signal indicative of the modulation format being received.

Claim 60	The Patel *et al.* Disclosure
A system according to one of claims 48 and 49, wherein said adaptive carrier recovery network is automatically configured to be compatible with the modulation format of said carrier modulated with video information, in response to a control signal generated by detection apparatus for determining the modulation format of said carrier modulated with video information.	Automatic configuration of various portions of the carrier recovery network of Patel *et al.* is accomplished based on the detection (or lack thereof) of a VSB pilot carrier by the DETECTOR 34, which generates a control signal indicative of the modulation format being received.

Claim 61	The Patel *et al.* Disclosure
In a receiver for adaptively processing an input signal containing data in one of a plurality of different input formats and wherein said data is encoded in one of a plurality of different coding formats, apparatus comprising:	The Patel *et al.* system receives and adaptively processes an input signal in one of plural modulation formats (QAM and VSB), which each have a corresponding, diverse coding format.
an adaptive timing recovery network for recovering timing information from said input signal as a function of a received input signal format;	The SAMPLE CLOCK GENERATOR 23, the QAM IN-PHASE SYNCHRONOUS DETECTOR 250, and the VSB IN-PHASE SYNCHRONOUS DETECTOR 290 cooperate to recover symbol timing and generate clock signals therefrom. <u>See</u> Fig. 3 and text at page 23, line 23 through page 24, line 3.
an adaptive data recovery network responsive to said timing information for recovering said data;	For QAM modulation format, the ADDRESS GENERATOR 28 receives timing data-derived 1st Clock Signal to drive the QAM COMPLEX CARRIER ROM 27 and the SYNCHRODYNE QAM TO BASEBAND circuitry 25. For VSB modulation format, the ADDRESS GENERATOR 32 receives timing data-derived 1st Clock Signal to drive the VSB COMPLEX CARRIER ROM 31 and the SYNCHRODYNE VSB TO BASEBAND circuitry 29.
a selectable decision network, included in said data recovery network, for applying a set of decision thresholds to data provided by said data recovery network to recover said data, said set of decision thresholds being selected from a plurality of sets of decision thresholds suitable for different input signal formats; and	The QAM 2-D TRELLIS DECODER 37 and the VSB 1-D TRELLIS DECODER 38 each contain a decision network, as selected by DATA SOURCE SELECTOR 39. Since the QAM 2-D TRELLIS DECODER 37 is a two-dimensional decoder and the VSB 1-D TRELLIS DECODER 38 is a one-dimensional decoder, and also since the VSB signal has a DC component, the decision networks in these decoders must utilize different sets of decision

	thresholds to recover the video information.
an adaptive decoder for selectively decoding said recovered data as a function of a received data coding format to produce recovered and decoded output data.	The QAM 2-D TRELLIS DECODER 37 and the VSB 1-D TRELLIS DECODER 38 each contain circuitry in addition to the decision network that determines the values of successive modulation levels. A trellis decoder, in addition to the decision network that determines the values of successive modulation levels, contains circuitry for discerning sequences of modulation levels that function as the "code vectors" of trellis modulation. Each sequence is evaluated so as to determine which of the permissible code vectors was most likely transmitted. The code vectors for QAM are defined by a sequence of symbols in a two-dimensional constellation of modulation levels. The code vectors for VSB are defined by as sequence of symbols in a one-dimensional constellation of modulation levels. So a different trellis coding procedure is required for QAM and VSB signals.

Claim 62	**The Patel *et al.* Disclosure**
In a receiver for adaptively processing an input signal containing data in one of a plurality of different input formats and wherein said data is encoded in one of a plurality of different coding formats, apparatus comprising:	The Patel *et al.* system receives and adaptively processes an input signal in one of plural modulation formats (QAM and VSB), which each have a corresponding, diverse coding format.
an adaptive timing recovery network for recovering timing information from said input signal as a function of a received input signal format;	The SAMPLE CLOCK GENERATOR 23, the QAM IN-PHASE SYNCHRONOUS DETECTOR 250, and the VSB IN-PHASE SYNCHRONOUS DETECTOR 290 cooperate to recover symbol timing and generate clock signals therefrom. See Fig. 3 and text at page 23, line 23 through page 24, line 3.
an adaptive carrier recovery network responsive to said timing information for recovering said data;	For QAM modulation format, the ADDRESS GENERATOR 28 receives timing data-derived 1^{st} Clock Signal to drive the QAM COMPLEX CARRIER ROM 27 and the SYNCHRODYNE QAM TO BASEBAND circuitry 25. For VSB modulation format, the ADDRESS GENERATOR 32 receives timing data-derived 1^{st} Clock Signal to drive the VSB COMPLEX CARRIER ROM 31 and the SYNCHRODYNE VSB TO BASEBAND circuitry 29.

a selectable decision network, included in said carrier recovery network, for applying a set of decision thresholds to data provided by said carrier recovery network to recover said data, said set of decision thresholds being selected from a plurality of sets of decision thresholds suitable for different input signal formats; and	The QAM 2-D TRELLIS DECODER 37 and the VSB 1-D TRELLIS DECODER 38 each contain a decision network, as selected by DATA SOURCE SELECTOR 39. Since the QAM 2-D TRELLIS DECODER 37 is a two-dimensional decoder and the VSB 1-D TRELLIS DECODER 38 is a one-dimensional decoder, and also since the VSB signal has a DC component, the decision networks in these decoders must utilize different sets of decision thresholds to recover the video information.
an adaptive decoder for selectively decoding said recovered data as a function of a received data coding format to produce recovered and decoded output data.	The QAM 2-D TRELLIS DECODER 37 and the VSB 1-D TRELLIS DECODER 38 each contain circuitry in addition to the decision network that determines the values of successive modulation levels. A trellis decoder, in addition to the decision network that determines the values of successive modulation levels, contains circuitry for discerning sequences of modulation levels that function as the "code vectors" of trellis modulation. Each sequence is evaluated so as to determine which of the permissible code vectors was most likely transmitted. The code vectors for QAM are defined by a sequence of symbols in a two-dimensional constellation of modulation levels. The code vectors for VSB are defined by as sequence of symbols in a one-dimensional constellation of modulation levels. So a different trellis coding procedure is required for QAM and VSB signals.

Claim 63	**The Patel *et al.* Disclosure**
In a receiver for adaptively processing an input signal containing data in one of a plurality of different input formats and wherein said data is encoded in one of a plurality of different coding formats, apparatus comprising:	The Patel *et al.* system receives and adaptively processes an input signal in one of plural modulation formats (QAM and VSB), which each have a corresponding, diverse coding format.
an adaptive timing recovery network for recovering timing information from said input signal as a function of a received input signal format;	The SAMPLE CLOCK GENERATOR 23, the QAM IN-PHASE SYNCHRONOUS DETECTOR 250, and the VSB IN-PHASE SYNCHRONOUS DETECTOR 290 cooperate to recover symbol timing and generate clock signals therefrom. See Fig. 3 and text at page 23, line 23 through page 24, line 3.

an adaptive data recovery network responsive to said timing information for recovering said data;	For QAM modulation format, the ADDRESS GENERATOR 28 receives timing data-derived 1st Clock Signal to drive the QAM COMPLEX CARRIER ROM 27 and the SYNCHRODYNE QAM TO BASEBAND circuitry 25. For VSB modulation format, the ADDRESS GENERATOR 32 receives timing data-derived 1st Clock Signal to drive the VSB COMPLEX CARRIER ROM 31 and the SYNCHRODYNE VSB TO BASEBAND circuitry 29.
an adaptive decoder for selectively decoding the data recovered by said adaptive data recovery network, as a function of a received data coding format, to produce recovered and decoded output data;	The QAM 2-D TRELLIS DECODER 37 and the VSB 1-D TRELLIS DECODER 38 each contain circuitry in addition to the decision network that determines the values of successive modulation levels. A trellis decoder, in addition to the decision network that determines the values of successive modulation levels, contains circuitry for discerning sequences of modulation levels that function as the "code vectors" of trellis modulation. Each sequence is evaluated so as to determine which of the permissible code vectors was most likely transmitted. The code vectors for QAM are defined by a sequence of symbols in a two-dimensional constellation of modulation levels. The code vectors for VSB are defined by as sequence of symbols in a one-dimensional constellation of modulation levels. So a different trellis coding procedure is required for QAM and VSB signals.
a selectable decision network, included in one of said adaptive decoder and said data recovery network, for applying a set of decision thresholds to data provided by said data recovery network to recover said data, said set of decision thresholds being selected from a plurality of sets of decision thresholds suitable for different input signal formats.	The QAM 2-D TRELLIS DECODER 37 and the VSB 1-D TRELLIS DECODER 38 each contain a decision network, as selected by DATA SOURCE SELECTOR 39. Since the QAM 2-D TRELLIS DECODER 37 is a two-dimensional decoder and the VSB 1-D TRELLIS DECODER 38 is a one-dimensional decoder, and also since the VSB signal has a DC component, the decision networks in these decoders must utilize different sets of decision thresholds to recover the video information.

Claim 64	**The Patel *et al.* Disclosure**
Apparatus according to one of claims 61-63, wherein said receiver for adaptively processing	Automatic configuration of various portions of the carrier recovery network of Patel *et al.* is

an input signal is automatically configured to be compatible with the format of said input signal.	accomplished based on the detection (or lack thereof) of a VSB pilot carrier by the DETECTOR 34, which generates a control signal indicative of the modulation format being received.

Claim 65	**The Patel *et al.* Disclosure**
Apparatus according to one of claims 61-63, wherein said receiver for adaptively processing an input signal is automatically configured to be compatible with the format of said input signal in response to a control signal generated by detection apparatus for determining the modulation format used for transmitting said input signal to said receiver.	Automatic configuration of various portions of the carrier recovery network of Patel *et al.* is accomplished based on the detection (or lack thereof) of a VSB pilot carrier by the DETECTOR 34, which generates a control signal indicative of the modulation format being received.

Claim 66	**The Patel *et al.* Disclosure**
Apparatus according to one of claims 61 and 63, wherein said data is carrier modulation data; and	The HDTV digital data to be transmitted is used to modulate a carrier wave. In the case of VSB, amplitude modulation is used. In the case of QAM, both phase and amplitude are modulated, but the carrier itself is suppressed. <u>See</u> page 1, lines 7-17.
said data recovery network is a carrier recovery network for recovering said modulation data.	The terms "data recovery network" and "carrier recovery network" are simply alternative ways of characterizing the same structures. This is shown by claim 17 of the `253 Patent.

Claim 67	**The Patel *et al.* Disclosure**
In a receiver for adaptively processing a carrier modulated with data in one of a plurality of different modulation formats suitable for satellite, terrestrial or cable transmission and wherein said modulating data is encoded in one of a plurality of different formats suitable for satellite, terrestrial or cable transmission, apparatus comprising:	The Patel *et al.* system receives and adaptively processes an input signal in one of plural modulation formats (QAM and VSB), which each have a corresponding, diverse coding format. As to types of transmission channels, terrestrial and cable transmission are expressly disclosed (page 1, lines 13, 15) and satellite transmission is implicitly disclosed by reference to "narrowcasting" (page 1, line 14).
an adaptive timing recovery network for recovering timing data from said modulated carrier as a function of a received carrier modulation format;	The SAMPLE CLOCK GENERATOR 23, the QAM IN-PHASE SYNCHRONOUS DETECTOR 250, and the VSB IN-PHASE SYNCHRONOUS DETECTOR 290 cooperate to recover symbol timing and generate clock

	signals therefrom. See Fig. 3 and text at page 23, line 23 through page 24, line 3.
an adaptive carrier recovery network responsive to said timing data for recovering said modulating data from said modulated carrier;	For QAM modulation format, the ADDRESS GENERATOR 28 receives timing data-derived 1st Clock Signal to drive the QAM COMPLEX CARRIER ROM 27 and the SYNCHRODYNE QAM TO BASEBAND circuitry 25. For VSB modulation format, the ADDRESS GENERATOR 32 receives timing data-derived 1st Clock Signal to drive the VSB COMPLEX CARRIER ROM 31 and the SYNCHRODYNE VSB TO BASEBAND circuitry 29.
a selectable decision network, included in said carrier recovery network, for applying a set of decision thresholds to data provided by said carrier recovery network to recover said modulating data, said set of decision thresholds being selected from a plurality of sets of decision thresholds suitable for said different modulation formats; and	The QAM 2-D TRELLIS DECODER 37 and the VSB 1-D TRELLIS DECODER 38 each contain a decision network, as selected by DATA SOURCE SELECTOR 39. Since the QAM 2-D TRELLIS DECODER 37 is a two-dimensional decoder and the VSB 1-D TRELLIS DECODER 38 is a one-dimensional decoder, and also since the VSB signal has a DC component, the decision networks in these decoders must utilize different sets of decision thresholds to recover the video information.
an adaptive decoder for selectively decoding said recovered modulating data as a function of a received data encoding format to produce demodulated and decoded output data.	The QAM 2-D TRELLIS DECODER 37 and the VSB 1-D TRELLIS DECODER 38 each contain circuitry in addition to the decision network that determines the values of successive modulation levels. A trellis decoder, in addition to the decision network that determines the values of successive modulation levels, contains circuitry for discerning sequences of modulation levels that function as the "code vectors" of trellis modulation. Each sequence is evaluated so as to determine which of the permissible code vectors was most likely transmitted. The code vectors for QAM are defined by a sequence of symbols in a two-dimensional constellation of modulation levels. The code vectors for VSB are defined by as sequence of symbols in a one-dimensional constellation of modulation levels. So a different trellis coding procedure is required for QAM and VSB signals.

Claim 68	The Patel *et al.* Disclosure
Apparatus according to claim 67, wherein said receiver for adaptively processing a carrier modulated with data is automatically configured to be compatible with the format of said carrier modulated with data.	Automatic configuration of various portions of the carrier recovery network of Patel *et al.* is accomplished based on the detection (or lack thereof) of a VSB pilot carrier by the DETECTOR 34, which generates a control signal indicative of the modulation format being received.

Claim 69	The Patel *et al.* Disclosure
Apparatus according to claim 67, wherein said receiver for adaptively processing a carrier modulated with data is automatically configured to be compatible with said one of a plurality of modulation formats in response to a control signal generated by detection apparatus for determining the modulation format used for transmitting said carrier modulated with data to said receiver.	Automatic configuration of various portions of the carrier recovery network of Patel *et al.* is accomplished based on the detection (or lack thereof) of a VSB pilot carrier by the DETECTOR 34, which generates a control signal indicative of the modulation format being received.

Claim 70	The Patel *et al.* Disclosure
In a receiver for adaptively processing an input signal containing a carrier modulated with video data in one of a plurality of different modulation formats suitable for satellite, terrestrial or cable transmission and wherein said modulating video data is encoded in one of a plurality of different formats suitable for satellite, terrestrial or cable transmission, apparatus comprising:	The Patel *et al.* system receives and adaptively processes an input signal in one of plural modulation formats (QAM and VSB), which each have a corresponding, diverse coding format. As to types of transmission channels, terrestrial and cable transmission are expressly disclosed (page 1, lines 13, 15) and satellite transmission is implicitly disclosed by reference to "narrowcasting" (page 1, line 14).
an adaptive timing recovery network for recovering timing data from said modulated carrier as a function of a received carrier modulation format;	The SAMPLE CLOCK GENERATOR 23, the QAM IN-PHASE SYNCHRONOUS DETECTOR 250, and the VSB IN-PHASE SYNCHRONOUS DETECTOR 290 cooperate to recover symbol timing and generate clock signals therefrom. <u>See</u> Fig. 3 and text at page 23, line 23 through page 24, line 3.
an adaptive carrier recovery network responsive to said timing data for recovering said modulating data from said modulated carrier;	For QAM modulation format, the ADDRESS GENERATOR 28 receives timing data-derived 1st Clock Signal to drive the QAM COMPLEX CARRIER ROM 27 and the SYNCHRODYNE QAM TO BASEBAND circuitry 25. For VSB

	modulation format, the ADDRESS GENERATOR 32 receives timing data-derived 1st Clock Signal to drive the VSB COMPLEX CARRIER ROM 31 and the SYNCHRODYNE VSB TO BASEBAND circuitry 29.
a selectable decision network, included in said carrier recovery network, for applying a set of decision thresholds to data provided by said carrier recovery network to recover said modulating data, said set of decision thresholds being selected from a plurality of sets of decision thresholds suitable for different modulation formats;	The QAM 2-D TRELLIS DECODER 37 and the VSB 1-D TRELLIS DECODER 38 each contain a decision network, as selected by DATA SOURCE SELECTOR 39. Since the QAM 2-D TRELLIS DECODER 37 is a two-dimensional decoder and the VSB 1-D TRELLIS DECODER 38 is a one-dimensional decoder, and also since the VSB signal has a DC component, the decision networks in these decoders must utilize different sets of decision thresholds to recover the video information.
an adaptive decoder for decoding said recovered modulating data as a function of a received data coding format to produce demodulated and decoded output data;	The QAM 2-D TRELLIS DECODER 37 and the VSB 1-D TRELLIS DECODER 38 each contain circuitry in addition to the decision network that determines the values of successive modulation levels. A trellis decoder, in addition to the decision network that determines the values of successive modulation levels, contains circuitry for discerning sequences of modulation levels that function as the "code vectors" of trellis modulation. Each sequence is evaluated so as to determine which of the permissible code vectors was most likely transmitted. The code vectors for QAM are defined by a sequence of symbols in a two-dimensional constellation of modulation levels. The code vectors for VSB are defined by as sequence of symbols in a one-dimensional constellation of modulation levels. So a different trellis coding procedure is required for QAM and VSB signals.
an adaptive deinterleaver for deinterleaving said demodulated and decoded output and providing a deinterleaved output in accordance with a deinterleaving function selected from a plurality of deinterleaving functions;	A DATA DEINTERLEAVER 40 (Fig. 2) is disclosed, which adapts based on control signal from DETECTOR 34 (Fig. 1).
an adaptive error processor for error correcting said deinterleaved output to provide an error corrected output; and	The REED-SOLOMON DECODER 41 provides error correction processing on the deinterleaved signal output by the DATA DEINTERLEAVER 40. See Fig. 2.

a derandomizer for restoring said error corrected data to an original format thereof before randomization performed for transmission purposes.	The DATA DERANDOMIZER 42 reconstitutes the error corrected data output by the REED-SOLOMON DECODER 41.

Claim 71	The Patel *et al.* Disclosure
Apparatus according to claim 70, wherein said receiver for adaptively processing an input signal is automatically configured to be compatible with the format of said input signal.	Automatic configuration of various portions of the receiver of Patel *et al.* is accomplished based on the detection (or lack thereof) of a VSB pilot carrier by the DETECTOR 34, which generates a control signal indicative of the modulation format being received.

Claim 72	The Patel *et al.* Disclosure
Apparatus according to claim 70, wherein said receiver for adaptively processing an input signal is automatically configured to be compatible with the format of said input signal in response to a control signal generated by detection apparatus for determining the modulation format used for transmitting said input signal to said receiver.	Automatic configuration of various portions of the receiver of Patel *et al.* is accomplished based on the detection (or lack thereof) of a VSB pilot carrier by the DETECTOR 34, which generates a control signal indicative of the modulation format being received.

Claim 73	The Patel *et al.* Disclosure
A receiver for adaptively processing a carrier modulated with video data in one of a plurality of different modulation formats and wherein said modulating video data is encoded in one of a plurality of different formats, comprising:	The Patel *et al.* system receives and adaptively processes an input signal in one of plural modulation formats (QAM and VSB), which each have a corresponding, diverse coding format. As to types of transmission channels, terrestrial and cable transmission are expressly disclosed (page 1, lines 13, 15) and satellite transmission is implicitly disclosed by reference to "narrowcasting" (page 1, line 14).
an adaptive timing recovery network for recovering timing data from said modulated carrier as a function of a received carrier modulation format;	The SAMPLE CLOCK GENERATOR 23, the QAM IN-PHASE SYNCHRONOUS DETECTOR 250, and the VSB IN-PHASE SYNCHRONOUS DETECTOR 290 cooperate to recover symbol timing and generate clock signals therefrom. See Fig. 3 and text at page 23, line 23 through page 24, line 3.
an adaptive carrier recovery network responsive to said timing data for recovering modulating data from said modulated carrier;	For QAM modulation format, the ADDRESS GENERATOR 28 receives timing data-derived 1st Clock Signal to drive the QAM COMPLEX

	CARRIER ROM 27 and the SYNCHRODYNE QAM TO BASEBAND circuitry 25. For VSB modulation format, the ADDRESS GENERATOR 32 receives timing data-derived 1st Clock Signal to drive the VSB COMPLEX CARRIER ROM 31 and the SYNCHRODYNE VSB TO BASEBAND circuitry 29.
a selectable decision network, included in said carrier recovery network, for applying a set of decision thresholds to data provided by said carrier recovery network to recover said modulating data, said set of decision thresholds being selected from a plurality of sets of decision thresholds suitable for said different modulation formats;	The QAM 2-D TRELLIS DECODER 37 and the VSB 1-D TRELLIS DECODER 38 each contain a decision network, as selected by DATA SOURCE SELECTOR 39. Since the QAM 2-D TRELLIS DECODER 37 is a two-dimensional decoder and the VSB 1-D TRELLIS DECODER 38 is a one-dimensional decoder, and also since the VSB signal has a DC component, the decision networks in these decoders must utilize different sets of decision thresholds to recover the video information.
an adaptive decoder for decoding said recovered modulating data and providing a decoded output as a function of a received data encoding format;	The QAM 2-D TRELLIS DECODER 37 and the VSB 1-D TRELLIS DECODER 38 each contain circuitry in addition to the decision network that determines the values of successive modulation levels. A trellis decoder, in addition to the decision network that determines the values of successive modulation levels, contains circuitry for discerning sequences of modulation levels that function as the "code vectors" of trellis modulation. Each sequence is evaluated so as to determine which of the permissible code vectors was most likely transmitted. The code vectors for QAM are defined by a sequence of symbols in a two-dimensional constellation of modulation levels. The code vectors for VSB are defined by as sequence of symbols in a one-dimensional constellation of modulation levels. So a different trellis coding procedure is required for QAM and VSB signals.
an adaptive deinterleaver for deinterleaving said decoded output and providing an output in accordance with a deinterleaving function selected from a plurality of deinterleaving functions;	A DATA DEINTERLEAVER 40 (Fig. 2) is disclosed, which adapts based on control signal from DETECTOR 34 (Fig. 1).
an adaptive error processor for error correcting said deinterleaved output to provide an error	The REED-SOLOMON DECODER 41 provides error correction processing on the

corrected output; and	deinterleaved signal output by the DATA DEINTERLEAVER 40. See Fig. 2.
a derandomizer for derandomizing said error corrected output.	The DATA DERANDOMIZER 42 reconstitutes the error corrected data output by the REED-SOLOMON DECODER 41.

Claim 74	**The Patel *et al.* Disclosure**
Apparatus according to claim 73, wherein said receiver for adaptively processing a carrier modulated with video data is automatically configured to be compatible with the format of said carrier modulated with video data.	Automatic configuration of various portions of the receiver of Patel *et al.* is accomplished based on the detection (or lack thereof) of a VSB pilot carrier by the DETECTOR 34, which generates a control signal indicative of the modulation format being received.

Claim 75	**The Patel *et al.* Disclosure**
Apparatus according to claim 73, wherein said receiver for adaptively processing an input signal is automatically configured to be compatible with the format of said carrier modulated with video data in response to a control signal generated by detection apparatus for determining the modulation format used for transmitting said carrier modulated with video data to said receiver.	Automatic configuration of various portions of the receiver of Patel *et al.* is accomplished based on the detection (or lack thereof) of a VSB pilot carrier by the DETECTOR 34, which generates a control signal indicative of the modulation format being received.

Claim 76	**The Patel *et al.* Disclosure**
In a system for receiving and adaptively processing a carrier modulated with data in one of a plurality of different modulation formats suitable for satellite, terrestrial or cable transmission, apparatus comprising:	The Patel *et al.* system receives and adaptively processes an input signal in one of plural modulation formats (QAM and VSB), which each have a corresponding, diverse coding format. As to types of transmission channels, terrestrial and cable transmission are expressly disclosed (page 1, lines 13, 15) and satellite transmission is implicitly disclosed by reference to "narrowcasting" (page 1, line 14).
a timing recovery network for recovering timing data from said modulated carrier as supplied via a currently received transmission channel;	The SAMPLE CLOCK GENERATOR 23, the QAM IN-PHASE SYNCHRONOUS DETECTOR 250, and the VSB IN-PHASE SYNCHRONOUS DETECTOR 290 cooperate to recover symbol timing and generate clock signals therefrom. See Fig. 3 and text at page 23, line 23 through page 24, line 3.
an adaptive data recovery network responsive to	For QAM modulation format, the ADDRESS

said timing data for recovering said modulating data from said modulated carrier in one of said plurality of modulation formats; and	GENERATOR 28 receives timing data-derived 1st Clock Signal to drive the QAM COMPLEX CARRIER ROM 27 and the SYNCHRODYNE QAM TO BASEBAND circuitry 25. For VSB modulation format, the ADDRESS GENERATOR 32 receives timing data-derived 1st Clock Signal to drive the VSB COMPLEX CARRIER ROM 31 and the SYNCHRODYNE VSB TO BASEBAND circuitry 29.
a selectable equalizer network included within said adaptive data recovery network for compensating for errors associated with said currently received transmission channel, wherein the configuration of said equalizer network is selected in accordance with the modulation format of said modulated carrier as supplied via said currently received transmission channel.	The EQUALIZER 36 (Fig. 2), at the end of the data recovery network, applies thresholds to data so that error corrections can be made to compensate for multipath interference. The EQUALIZER 36 adapts based on the signal format indicated by the DETECTOR 34 (Fig. 1).

Claim 77	**The Patel *et al.* Disclosure**
Apparatus as set forth in claim 76, wherein said equalizer network is automatically configured to be compatible with the modulation format of said modulated carrier as supplied via said currently received transmission channel,	Automatic configuration of various portions of the selectable equalizer network of Patel *et al.* is accomplished based on the detection (or lack thereof) of a VSB pilot carrier by the DETECTOR 34.
the automatic configuring being done in response to a control signal generated by detection apparatus for determining the modulation format used for transmitting said modulating data to said receiver.	The DETECTOR 34 generates a control signal indicative of the modulation format being received.

Claim 78	**The Patel *et al.* Disclosure**
A system according to claim 76, wherein said selectable equalizer network includes a feed forward equalizer filter and a decision feedback equalizer.	The EQUALIZER 36 is disclosed as having a multiple tap digital filter, which would be understood by persons having ordinary skill in this art to include at least feed forward taps and possibly feed back taps. Use of feed back in the EQUALIZER 36 is expressly disclosed. See page 14, lines 14-21.

Claim 79	**The Patel *et al.* Disclosure**
In a system for receiving a modulated signal from multiple types of transmission channels, said signal being representative of compressed	The Patel *et al.* system receives and adaptively processes a carrier modulated by one of diverse modulation formats and one of diverse coding

digital data coded in one of a plurality of coding formats and exhibiting one of a plurality of modulation formats, a method comprising the steps of:	formats. As to types of transmission channels, terrestrial and cable transmission are expressly disclosed (page 1, lines 13, 15) and satellite transmission is implicitly disclosed by reference to "narrowcasting" (page 1, line 14).
selecting a modulation format for demodulation from among modulation formats including a QAM format and including another modulation format;	Selection between modulation formats is made by the SYNCHRODYNE RESULT SELECTOR 33 in response to the detection signal produced by the VSB PILOT CARRIER PRESENCE DETECTOR 34. See Fig. 1. Note text at page 13, lines 13-25.
demodulating said modulated signal according to said selected modulation format to produce a demodulated signal;	Demodulation is performed by either the SYNCHRODYNE QAM TO BASEBAND 25 or the SYNCHRODYNE VSB TO BASEBAND 29, depending upon the signal path selected by the SYNCHRODYNE RESULT SELECTOR 33. See Fig. 1.
selecting a coding format for decoding from among said plurality of coding formats; and	Selection between coding formats for decoding is made by the DATA SOURCE SELECTOR 39 (Fig. 2) in response to the detection signal produced by the VSB PILOT CARRIER PRESENCE DETECTOR 34 (Fig. 1). Note text at page 15, lines 1-13.
decoding said demodulated signal according to said selected coding format to produce a demodulated and decoded signal.	Decoding is performed by either the QAM 2-D TRELLIS DECODER 37 or the VSB 1-D TRELLIS DECODER 38, depending upon the signal path selected by the DATA SOURCE SELECTOR 39. See Fig. 2.

Claim 80	**The Patel *et al.* Disclosure**
A method according to claim 79, wherein said modulation formats also include PAM.	A species of Pulse Amplitude Modulation (PAM) is disclosed: eight level VSB amplitude modulation. See page 1, lines 12-13.

Claim 81	**The Patel *et al.* Disclosure**
A method according to claim 80, wherein said PAM is received as a vestigial-sideband amplitude-modulation.	VSB amplitude modulation is one disclosed modulation format that is received. See page 5, line 25.

Claim 82	**The Patel *et al.* Disclosure**
A method according to claim 79, wherein said plurality of coding formats includes punctured coded and trellis coded formats.	The decoders 37, 38 decode trellis coded format. Punctured code format is a common species of trellis coded format.

Claim 83	The Patel *et al.* Disclosure
A method according to claim 79, wherein said plurality of coding formats includes trellis coded formats.	The decoders 37, 38 decode trellis coded format.

Claim 84	The Patel *et al.* Disclosure
A method according to claim 83, wherein at least one of said trellis coded formats is a punctured coded format.	Trellis coded format is inherent to VSB amplitude modulation, which is disclosed by Patel *et al.*

Claim 85	The Patel *et al.* Disclosure
A method according to claim 79, wherein said step of selecting a modulation format includes a step of selecting between multiple types of transmission channels including at least two channels from among satellite, cable and terrestrial channels.	As taught according to the preferred embodiment, selection is made between VSB and QAM. VSB is identified as being a terrestrial channel or, possibly a narrowcast (i.e., satellite) or cable channel. See page 1, lines 12-15. QAM is identified as being a cable channel. See page 1, lines 15-17.

Claim 86	The Patel *et al.* Disclosure
A method according to claim 79, wherein said QAM format is QPSK.	For M-ary QAM and M-ary QPSK, where M=4, the two modulation formats have identical constellations and are, thus, the same thing.

Claim 87	The Patel *et al.* Disclosure
In a system for receiving a modulated signal from multiple types of transmission channels, said signal being representative of compressed digital data coded in one of a plurality of coding formats and exhibiting one of a plurality of modulation formats, said multiple types of transmission channels including at least two channels from among satellite, cable and terrestrial channels, signal processing apparatus comprising:	The Patel *et al.* system receives and adaptively processes a carrier modulated by one of diverse modulation formats and one of diverse coding formats. As to types of transmission channels, terrestrial and cable transmission are expressly disclosed (page 1, lines 13, 15) and satellite transmission is implicitly disclosed by reference to "narrowcasting" (page 1, line 14).
a demodulator for selectively demodulating said modulated signal from among modulation formats including PAM and including QAM to produce a demodulated signal; and	Selection between modulation formats is made by the SYNCHRODYNE RESULT SELECTOR 33 in response to the detection signal produced by the VSB PILOT CARRIER PRESENCE DETECTOR 34. See Fig. 1. Note text at page 13, lines 13-25. Demodulation is performed by either the SYNCHRODYNE

	QAM TO BASEBAND 25 or the SYNCHRODYNE VSB TO BASEBAND 29, depending upon the signal path selected by the SYNCHRODYNE RESULT SELECTOR 33. See Fig. 1. VSB amplitude modulation is a species of PAM.
a decoder for selectively decoding said demodulated signal from among coding formats including punctured coded and trellis coded formats to produce a demodulated and decoded signal.	Selection between coding formats for decoding is made by the DATA SOURCE SELECTOR 39 (Fig. 2) in response to the detection signal produced by the VSB PILOT CARRIER PRESENCE DETECTOR 34 (Fig. 1). Note text at page 15, lines 1-13. Decoding is performed by either the QAM 2-D TRELLIS DECODER 37 or the VSB 1-D TRELLIS DECODER 38, depending upon the signal path selected by the DATA SOURCE SELECTOR 39. See Fig. 2. Trellis coded format is inherent to VSB amplitude modulation. Punctured code format is a common species of trellis coded format.

Claim 88	**The Patel *et al.* Disclosure**
In a system for receiving a modulated signal from multiple types of transmission channels, said signal being representative of compressed digital data coded in one of a plurality of coding formats and exhibiting one of a plurality of modulation formats, said multiple types of transmission channels including at least two channels from among satellite, cable and terrestrial channels, signal processing apparatus comprising:	The Patel *et al.* system receives and adaptively processes a carrier modulated by one of diverse modulation formats and one of diverse coding formats. As to types of transmission channels, terrestrial and cable transmission are expressly disclosed (page 1, lines 13, 15) and satellite transmission is implicitly disclosed by reference to "narrowcasting" (page 1, line 14).
a demodulator for selectively demodulating said modulated signal from among modulation formats including PAM and including QAM to produce a demodulated signal; and	Selection between modulation formats is made by the SYNCHRODYNE RESULT SELECTOR 33 in response to the detection signal produced by the VSB PILOT CARRIER PRESENCE DETECTOR 34. See Fig. 1. Note text at page 13, lines 13-25. Demodulation is performed by either the SYNCHRODYNE QAM TO BASEBAND 25 or the SYNCHRODYNE VSB TO BASEBAND 29, depending upon the signal path selected by the SYNCHRODYNE RESULT SELECTOR 33. See Fig. 1. VSB amplitude modulation is a species of PAM.

a decoder for selectively decoding said demodulated signal from among coding formats including trellis coded formats to produce a demodulated and decoded signal.	Selection between coding formats for decoding is made by the DATA SOURCE SELECTOR 39 (Fig. 2) in response to the detection signal produced by the VSB PILOT CARRIER PRESENCE DETECTOR 34 (Fig. 1). Note text at page 15, lines 1-13. Decoding is performed by either the QAM 2-D TRELLIS DECODER 37 or the VSB 1-D TRELLIS DECODER 38, depending upon the signal path selected by the DATA SOURCE SELECTOR 39. See Fig. 2.

Claim 89	**The Patel *et al.* Disclosure**
Apparatus according to claim 88, wherein at least one of said trellis coded formats is a punctured coded format.	Trellis coded format is inherent to VSB amplitude modulation, which is disclosed by Patel *et al.* Punctured code format is a common species of trellis coded format.

Claim 90	**The Patel *et al.* Disclosure**
Apparatus according to one of claims 87 and 88, wherein said data is video information.	High definition television (HDTV) video reception is the disclosed utility. See page 1, lines 1-2.

Claim 91	**The Patel *et al.* Disclosure**
Apparatus according to claim 90, wherein said video information is television picture information.	High definition television (HDTV) video reception is the disclosed utility. See page 1, lines 1-2.

Claim 92	**The Patel *et al.* Disclosure**
Apparatus according to one of claims 87 and 88, wherein said data is television information, including video information and sound information.	High definition television (HDTV) video reception is the disclosed utility. See page 1, lines 1-2. After the data packets are sorted, video information is routed to the MPEG VIDEO DECODER 51 and sound information is routed to the DIGITAL SOUND DECODER 47. See Fig. 2.

Claim 93	**The Patel *et al.* Disclosure**
In a system for receiving a modulated signal from multiple types of transmission channels, said signal being representative of compressed digital data coded in one of a plurality of coding formats and exhibiting one of a	The Patel *et al.* system receives and adaptively processes a carrier modulated by one of diverse modulation formats and one of diverse coding formats. As to types of transmission channels, terrestrial and cable transmission are expressly

plurality of modulation formats, a method comprising the steps of:	disclosed (page 1, lines 13, 15) and satellite transmission is implicitly disclosed by reference to "narrowcasting" (page 1, line 14).
selecting a modulation format for demodulation from among said plurality of modulation formats;	Selection between modulation formats is made by the SYNCHRODYNE RESULT SELECTOR 33 in response to the detection signal produced by the VSB PILOT CARRIER PRESENCE DETECTOR 34. See Fig. 1. Note text at page 13, lines 13-25.
demodulating said modulated signal according to said selected modulation format to produce a demodulated signal	Demodulation is performed by either the SYNCHRODYNE QAM TO BASEBAND 25 or the SYNCHRODYNE VSB TO BASEBAND 29, depending upon the signal path selected by the SYNCHRODYNE RESULT SELECTOR 33. See Fig. 1.
selecting a coding format for decoding from among coding formats including punctured coded and trellis coded formats; and	Selection between coding formats for decoding is made by the DATA SOURCE SELECTOR 39 (Fig. 2) in response to the detection signal produced by the VSB PILOT CARRIER PRESENCE DETECTOR 34 (Fig. 1). Note text at page 15, lines 1-13. Trellis coded format is inherent to VSB amplitude modulation. Punctured code format is a common species of trellis coded format.
decoding said demodulated signal according to said selected coding format to produce a demodulated and decoded signal.	Decoding is performed by either the QAM 2-D TRELLIS DECODER 37 or the VSB 1-D TRELLIS DECODER 38, depending upon the signal path selected by the DATA SOURCE SELECTOR 39. See Fig. 2.

Claim 94	**The Patel *et al.* Disclosure**
In a system for receiving a modulated signal from multiple types of transmission channels, said signal being representative of compressed digital data coded in one of a plurality of coding formats and exhibiting one of a plurality of modulation formats, a method comprising the steps of:	The Patel *et al.* system receives and adaptively processes a carrier modulated by one of diverse modulation formats and one of diverse coding formats. As to types of transmission channels, terrestrial and cable transmission are expressly disclosed (page 1, lines 13, 15) and satellite transmission is implicitly disclosed by reference to "narrowcasting" (page 1, line 14).
selecting a modulation format for demodulation from among said plurality of modulation formats;	Selection between modulation formats is made by the SYNCHRODYNE RESULT SELECTOR 33 in response to the detection signal produced by the VSB PILOT CARRIER PRESENCE DETECTOR 34. See Fig. 1. Note

	text at page 13, lines 13-25.
demodulating said modulated signal according to said selected modulation format to produce a demodulated signal;	Demodulation is performed by either the SYNCHRODYNE QAM TO BASEBAND 25 or the SYNCHRODYNE VSB TO BASEBAND 29, depending upon the signal path selected by the SYNCHRODYNE RESULT SELECTOR 33. See Fig. 1.
selecting a coding format for decoding from among coding formats including trellis coded formats; and	Selection between coding formats for decoding is made by the DATA SOURCE SELECTOR 39 (Fig. 2) in response to the detection signal produced by the VSB PILOT CARRIER PRESENCE DETECTOR 34 (Fig. 1). Note text at page 15, lines 1-13.
decoding said demodulated signal according to said selected coding format to produce a demodulated and decoded signal.	Decoding is performed by either the QAM 2-D TRELLIS DECODER 37 or the VSB 1-D TRELLIS DECODER 38, depending upon the signal path selected by the DATA SOURCE SELECTOR 39. See Fig. 2.

Claim 95	**The Patel *et al.* Disclosure**
Apparatus according to claim 94, wherein at least one of said trellis coded formats is a punctured coded format.	Trellis coded format is inherent to VSB amplitude modulation, which is disclosed by Patel *et al.* Punctured code format is a common species of trellis coded format.

Claim 96	**The Patel *et al.* Disclosure**
A method according to one of claims 93 and 94, wherein said plurality of modulation formats includes a QAM format.	One of the modulation formats disclosed in the exemplary embodiment of Patel *et al.* is QAM. This is shown by the SYNCHRODYNE QAM TO BASEBAND 25 block (Fig. 1), as well as the QAM 2-D TRELLIS DECODER 37 block (Fig. 2).

Claim 97	**The Patel *et al.* Disclosure**
A method according to claim 96, wherein said QAM format is QPSK.	For M-ary QAM and M-ary QPSK, where M=4, the two modulation formats have identical constellations and are, thus, the same thing.

Claim 98	**The Patel *et al.* Disclosure**
A method according to claim 96, wherein said plurality of modulation formats includes PAM.	A species of Pulse Amplitude Modulation (PAM) is disclosed: eight level VSB amplitude modulation. See page 1, lines 12-13.

Claim 99	The Patel *et al.* Disclosure
A method according to claim 98, wherein said PAM is received as a vestigial-sideband amplitude-modulation.	VSB amplitude modulation is one disclosed modulation format that is received. See page 5, line 25.

Claim 100	The Patel *et al.* Disclosure
A method according to one of claims 93 and 94, wherein said step of selecting a modulation format includes a step of selecting between multiple types of transmission channels including at least two channels from among satellite, cable and terrestrial channels.	As taught according to the preferred embodiment, selection is made between VSB and QAM. VSB is identified as being a terrestrial channel or, possibly a narrowcast (i.e., satellite) or cable channel. See page 1, lines 12-15. QAM is identified as being a cable channel. See page 1, lines 15-17.